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THE AGRICULTURAL STUDENT

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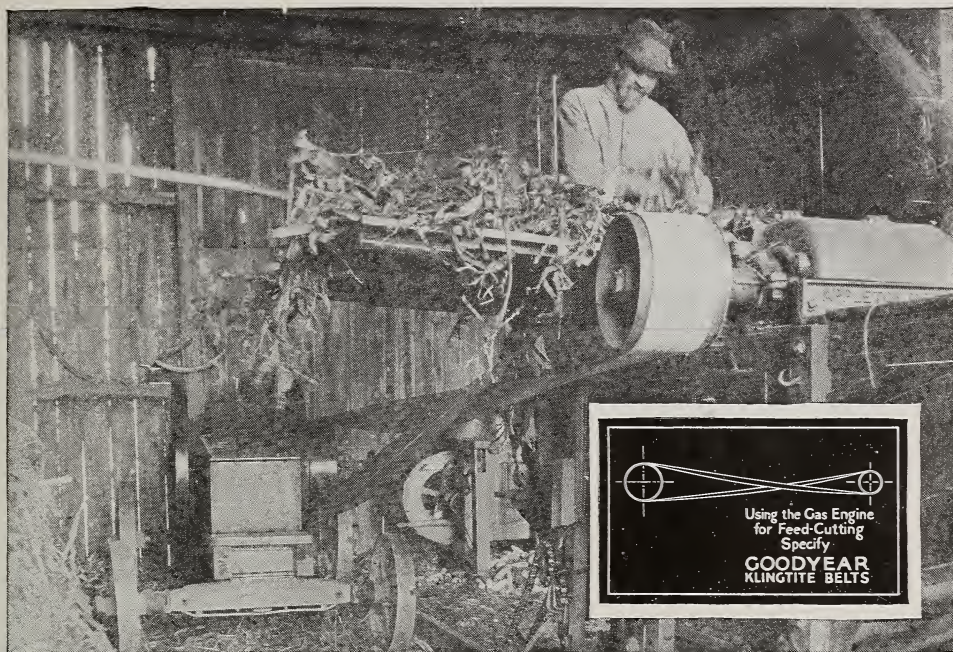
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TABLE OF CONTENTS



	Page
THE BUSINESS END OF FARMING—	
C. J. Welday-----	261
THE AGRICULTURE AT ALASKA EXPERIMENT STATION—	
W. L. Henning-----	264
PRESENT STATUS COUNTY AGENTS IN OHIO—	
O. M. Johnson-----	267
THE AMERICAN FARMER AND THE GRANGE—	
O. R. Keyser-----	269
SAN JOSE SCALE—	
E. W. Mendenhall-----	271
OUR FARMERS NEED BOOKS—	
F. E. Adams-----	272
EDUCATIONAL VALUE OF THE DAIRY SHOW—	
D. S. Kochheiser-----	273
EDITORIAL -----	274
ALUMNI NOTES -----	276
HOME ECONOMICS DEPARTMENT-----	278



The Agricultural Student

VOL. XXVI

OHIO STATE UNIVERSITY, COLUMBUS, OHIO, MARCH, 1920

No. 6

THE BUSINESS END OF FARMING

By WHEELER J. WELDAY.

(The following is from an address by Mr. Welday before the Eight Weeks men. Mr. Welday is proprietor of the Shawonoe Orchards at Smithfield, Ohio, and has considerable experience along this line.)

A BIG feature of the coming farmer's business equipment is cooperation. One difficulty in organizing farmers is that the need in the past has not been felt keenly enough. It was an easy matter for those weavers of Rochdale, England, back in 1844 to get together. They were making forty-six cents a week. The need was great. The apple men of the Northwest easily formed their organization because previous to this war they were not making money. It took something more than individual effort. With the average farmer the case is different; he is independent, comfortably fixed, making some money, and what's more rather satisfied. But I believe the time is here when even this self-satisfied farmer is feeling the need of something more than single effort in order to get his rights. What are some of his needs, and possibilities as well?

There is the labor problem daily growing more serious. The farmer has been dragging on at his long hours, but he is getting tired, especially so since other classes have left him standing alone. To put it tritely, the farmer already observes an eight hour day—eight in the forenoon and eight in the afternoon. I have seen the statement—I don't know how true it is—that there are more farmers who die of heart disease than any other class. I have seen the statement—I don't know how

true it is—that there are more farmers' wives in the insane asylum than any other class of people. If their own welfare directly hasn't proven incentive enough to stop this wholesale butchery, they are opening their eyes when they see such examples as the miners asking for a five day week and a six hour day; or twelve thousand house painters of New York City demanding a five hour day. Not only is the laborer's wage getting beyond reach of the farmer, but the supply of skilled farm help is practically shut off. One day last summer in hay harvest I succeeded in getting a foreigner to help me out of a pinch. If one could have heard the good natured jeers that hailed that foreigner as his buddies went home from work about five o'clock, he might understand why the farmer is refusing to be the goat any longer. "What's the matter Joe, you quit big money job today." "Hey, Joe, you no go to roost with the chickens tonight," etc., etc. Yet there was I, superintending a job that was stigmatized by the miners as one of starvation wages and drudgery. There was their day done, but I must work on till sun down in order to feed them. Why can't I, with the exalted task on my shoulders of feeding humanity, go into the open market and get good labor at market prices? Why must the farmer get on his knees to his friends, and his wife's relations, and

finally the minister in order to harvest the produce that is to feed the world? I say here is a need at least for some co-operative thinking.

Then there's the need of cooperative buying and selling. Personally I don't think the buying need so serious. Usually the local dealer—and hence local tax payer—is glad to supply goods in large quantities at reasonable prices. He should be expected to handle a full stock of goods in his line. Recently in my home town I couldn't get a boy's work shirt or a milk crock because they were claimed to be unprofitable. Besides a first-class article should be insisted upon. On my father's recent farm is an old paling fence thirty-two years old. The wire on that fence can be bent six or eight times before it breaks. I'll venture to say that old iron wire is good for forty years. What kind of fencing material are we getting now-a-days? I don't know whether the art of making that old iron wire is lost or not, but I'll warrant that if we farmers demanded it today we would get it. I don't know what regulations are enforced upon our commission men, but I do know that many a consignor is bled because of weights or uncertified sales, which need not be if farmers were organized and had their qualified representative on the job. I say I don't know what laws regulate this matter at present, but I do know that if I send a crate of chickens to Pittsburgh I am lucky to get any crate back.

But the big thing here is the selling end of it. It has been said that we farmers are getting thirty-five cents on the dollar for our produce. Immediately we conceive of ways to get the other sixty-five cents. We can't get it, nor is the greater part of it coming to us. Cooperative stores are mostly out of the farmer's field. Direct marketing

is only local, and confined for the most part to sections near the good markets; it can never be the general remedy for the general farmers' ills in this regard. We need the wholesaler; we need the retailer; we certainly need the transporter. Of course we have striking examples of the middle man's getting his unjust share; his free handedness must be curtailed.

The middleman is not only dipping into our profits directly, but he is largely the cause of all this animosity stirred up over the farmer "profiteering," and is furthermore through the added burden he is placing upon the consumer shutting off the demand for the farmer's produce. But serious as all this is, our loss here is not as great as the loss that is incurred through our inefficient methods of production, and what we lose at first sale because of our lack of organized defense. Uniform products should be grown. More efficient handling follows their production on a larger scale. Bigger buyers are attracted and a greater saving in shipping rates is effected—all this to say nothing of the wasteful and unscientific methods that need remedying.

Where we speak of the loss at first sale, let it not be misunderstood that the farmer is not getting enough for his produce. I am not saying here "in proportion to other classes" but that, as Director Thorne says, the average farmer is not making money at all. My own father having sold his farm sees now what the average farmer doesn't see while operating his farm. He now has his money on interest; the upkeep of that farm has ceased; and his hatchet is now bringing him in a substantial income besides—the farmers overlooked salary as manager you will note, before he left the farm. According to current opinion it seems the farmers'

expenses have not increased in proportion to other classes. But almost every article needed on the farm has more than doubled, with labor often four times or more what it previously was. There's the nursery stock I have to buy selling at seventy-five cents a tree, when eight years ago I bought it for eleven. There's clover seed nearly forty dollars a bushel. Nor is net income what it is supposed to be. A careful record revealed to me the fact that my corn crop last year of nine acres netted me forty dollars and sixteen cents over what my team consumed and my own time counted at three dollars and eighty-five cents a day. A drought prevailed in this section last year to be sure, but note that my crop was over forty bushels to the acre or above the average for the country in normal times, and that it was sold as high as \$2.10 per bushel.

There's the average farm in Ohio of a little less than one hundred acres which means that the average wheat crop is less than one hundred and fifty bushels. We farmers are profiteering on wheat; yet I came into this building this afternoon with over fifty-two dollars of that crop on my back. Here then is a need for cooperation.

Then of those who have made some money bear in mind how it came about. It was first because the farmer has been doing without what the city man deems a necessity. Recently I dropped in at one of the leading department stores in Pittsburgh to surprise my wife with a fur scarf. Who got surprised? A small piece of seal about the size of her collar was priced at just sixty-five dollars. Well, my wife isn't wearing fur this winter. Had it been a clerk in a department store that fur would have been bought. My wife and I may struggle on and some day own a neat little

farmstead, and live independently and comfortably. Yet before we die we may hear from those who are *less fortunate*, how "some people get everything, some people nothing." And secondly some money has been made because of the farmers long hours when other classes were putting in short ones; because he had a wife or children perhaps whose efforts were merged into the business and no time counted for any of the family. The fact of the matter is that the farmer can not pay current wages today for farm help; he can not do it. Right at the time when the farmer is being accused of profiteering, let the consumer bear in mind that all that keeps produce from being twice what it is, are the long unremunerated hours of the farmer and the unreckoned time of the whole family. In other words, cut the hours in two, and produce doubles.

So our need of cooperation is great. The fact that our grievances are so outstanding, means one of our biggest problems will be to keep down the radical element. The success of other classes by the strike policy indicates that we will have to fight against the line of least resistance; for the farmers' sanity and dependability must be maintained. He must not lose his sponsorship of this great substantial middle element—the backbone and the mainstay of this turbulent Republic. Reforms must be wrought out slowly and along economic lines. The public must be educated, but most of all the farmer himself must be educated. At present we do not know how we are to work out our salvation, nor are we sure that we know what that salvation is. Let us first start at the bottom and overcome our shiftless and unbusinesslike methods of production; let's increase our efficiency. This alone is more a part of

(Continued on page 284)

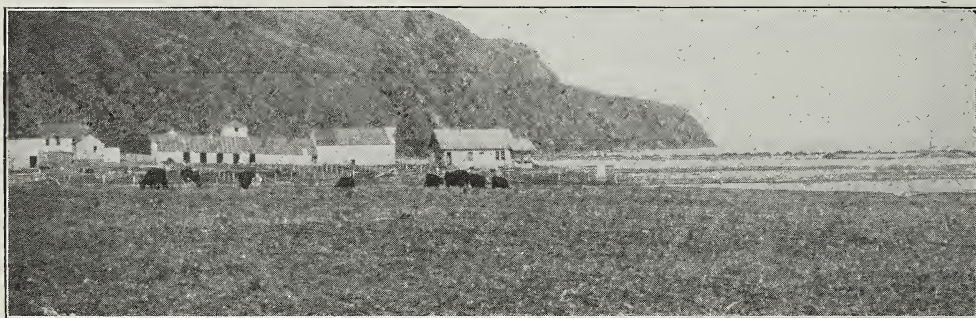
THE AGRICULTURE AT ALASKAN EXPERIMENT STATIONS

By WM. L. HENNING, '21.

(Mr. Henning accompanied Prof. Griggs on his trip to Mt. Katmai this past summer. Herein is told of agricultural observations at the Experiment Stations.)

AGRICULTURE in Alaska covers a great field, presenting many difficult and interesting problems. The work has been carried on by five experiment stations in that territory, all under direct supervision of A. C. True, Director of the States Relations Service, United States Department of Agriculture. Alaska agriculture experiment stations are located at Sitka, Kodiak, Rampart, Fairbanks and Matanuska. In Alaska the work has been

vary, some having the special problem assigned of breeding and developing grain and forage crops, while others have the problems of feeding, breeding and developing livestock. Much of the experimental work of the mainland has been carried out at the Fairbanks and Matanuska stations. The Matanuska station is on the line of the government railroad and approximately forty miles from Anchorage, while the Fairbanks station is much farther inland. At



PART OF THE HERD OF GALLOWAYS AND BUILDINGS OF THE EXPERIMENT STATION RANCH AT KALSIN BAY.

under the Agronomist C. C. Georgeson.

From an agricultural standpoint there is no doubt that climatic conditions are the most important factor. Weather conditions are not the best in Alaska, naturally from its geographic location. Altho conditions vary at the different stations because of different localities, a daily mean temperature for June, July and August, 1917, at four of the stations shows an average of 55 deg. F. This is a very important item when we think that June, July and August are the summer months.

Of course the work of the stations

Fairbanks about 100 acres of land has been available for crops, 95 acres of which was in small grains and five acres in root crops.

A very interesting and highly important factor in farming in Alaska is that only south slope fields are utilized in seed growing, while north slope fields are devoted to raising grain hay.

In this section spring work in the fields can generally be begun about the first week in May on the south slopes. Crops are planted or the general field seeding begins in the middle of May, while potatoes all should be planted by

June first. Harvesting begins about September first.

Harvesting the grains at this station is a big problem. Insufficient barns prevents storing any great amount inside; weather conditions prevent the threshing of a small part from the field, while the greater portion must be threshed from the stacks after snow-fall.

Threshing machinery at this station now is a 8-16 Mogul tractor and a 21-inch cylinder separator. Along with this comes a tale of the arrival of the new machinery. It took a long time before sufficient funds were available

almost all varieties of wheat and rye winterkill. Of the spring grains three varieties of wheat, two of oats and two of barley were grown under field conditions. Both the hulless and beardless barley seems to be the best variety. Two varieties of oats seem to be best adapted to their conditions—a Finnish Black and Canadian oats. Of the wheats three spring varieties—Marquis, Russian and Romanow—seem to give average yields of about thirty bushels per acre. A few legumes are being tried, field peas, alfalfa and red clover, but the only drawback seems to be the fact that they winterkill.



A KODIAK NATIVE AND A BOAT LOAD OF KELP FOR HIS POTATO PATCH.

for the purchase of the outfit and then after it was shipped it was six weeks longer than usual on the way. Only an example of the transportation service into the interior of Alaska. Farmers here need to get all machinery into the country a season before they have use for them, or they will be delayed in their operations. However, this feature is being partially overcome, as some of the merchants are beginning to put in a stock of the more simple farming implements.

Winter grains are of no use here as

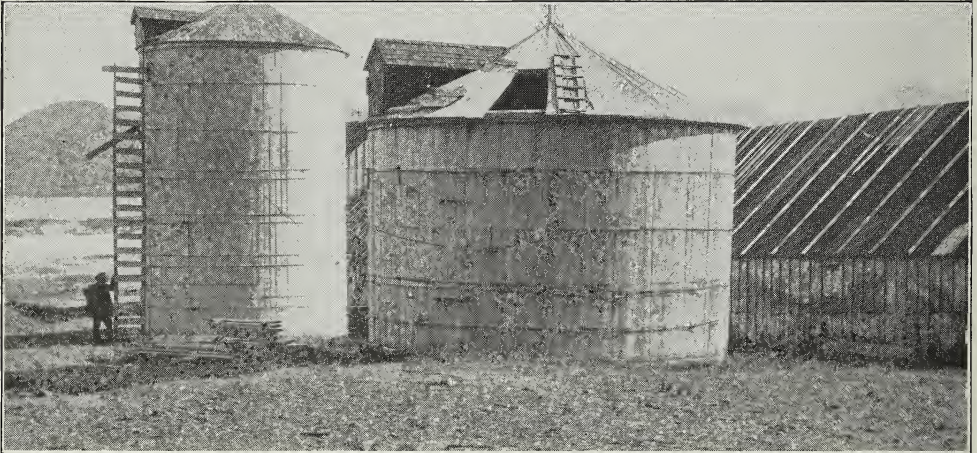
The next important crop is the hay crop, consisting mainly of gray hay. This is the planting of cereal grains, mostly oats, and harvesting them when in the dough stage. Yields of one to one and a half tons of very good hay are being obtained. This is a very important factor when one thinks that before the war the price of timothy hay at Fairbanks was \$110 per ton.

The potato is without question the most important vegetable grown in Alaska. Every garden patch through-

out the Territory has at least a few rows of potatoes, and near Fairbanks and in the Matanuska Valley potatoes constitute the chief money crop, having been grown recently to such an extent that they have glutted the market, as in the fall of 1919, when potatoes were cheaper at Fairbanks than at Seattle, a fact indicating the rapid development of the country. This is also shown by the fact that in 1917 only 28 tons of potatoes were shipped into Fairbanks, while in 1910 about 1,000 tons were shipped there from Seattle, tho the population in the territory was increasing. Potatoes vary greatly in

Along the seacoast the natives have discovered an unlimited supply of fertilizers. In the early spring at Kodiak Island natives are seen bringing in boatload after boatload of kelp and placing it on the potato patches before preparing the seed bed. This practice has proven to be one of the most beneficial and economic sources of the fertilizer potassium.

One of the problems of the stations in the Territory was with livestock, and they already have done good work in demonstrating that cattle and sheep of the right breeds can be maintained in that climate successfully. This prob-



SILOS OF THE EXPERIMENT STATION AT KALSIN BAY.

yield and in quality in different localities. Indeed it may be said that few potatoes mature normally in Alaska as the tops grow and remain green until killed by frosts, the season being too short for maturity. Tho the tubers may be of good size they are rarely fully matured and are often soft, soggy and unpalatable when cooked. Experiments have proved that in part the problem of overcoming these difficulties can be solved by selecting early varieties, sprouting the seed and by planting on south slopes.

lem becomes greater when one realizes the value of a team of horses which have to be transported 1500 miles and over mountain ranges, and then after the team was in use, have a mishap which actually happened with one of the station's teams. As they were taking one of the foremen to a point of transportation *by dog team*, in crossing a body of frozen water (lake) they accidentally hit an air hole and lost team, sled and all.

Most of the livestock development

(Continued on page 286)

THE PRESENT STATUS OF COUNTY AGENT WORK IN OHIO

By O. M. JOHNSON

(Mr. Johnson is state leader of the county agents and gives below the nature, possibilities and the job of the county agent.)

IN 74 counties of the state, local appropriation has been made, and men are either already employed or will be employed very soon. In all of the other counties excepting two a local Farm Bureau organization has been formed, largely with the view to the employment of an agent in the near future. Within a comparatively short period of time, we may confidently look forward to every county having a paid worker in this field.

In the fall of 1919, an attempt was made to get the farmers' opinion of a number of phases of extension work, by sending to four different counties, namely, Licking, Montgomery, Clermont and Geauga, men who visited all of the farmers in given territories, and got from these men answers to a definite set of questions. The purpose in mind all the time was to find out how effectively farmers in these territories have been reached by the various forms of extension work. In general, it may be said there was not much difference in the different communities studied, so that the opinion of all may be summarized as one. Approximately seventy per cent of the people studied in these counties were acquainted with the county agent, and about eighty-five per cent of those who had come in contact with the agent expressed themselves as favorable to the work.

At the same time an attempt was made in Geauga County to find out how effective the work of the county agent had been in changing farm practice. In Burton township of Geauga county, seventy-six per cent of the farmers were

using lime, where six years ago less than one per cent of them were using it. Seventy per cent of the farmers were treating oats for smut, where about one per cent of them had treated oats for smut six years ago. Eighty-eight per cent of them were using acid phosphate, where six years ago only about one-third of them were treating their soil systematically with this fertilizer. From this it would seem that a rather large percentage of the farmers have changed their practice during the period when a county agent has been employed in the county. A number of the men said they had been induced to change their practice along one or more lines due to the direct contact with the county agent, while a number of others had come in contact with neighbors who may have gotten their first information along these lines from the county agent. It would not seem fair to assume that the county agent was wholly responsible for these changes in farm methods, but certainly he has played a large part in these changes, and the fact that a great majority of the people believe he is worth while as a public servant, certainly indicates that the county agent has found a place in the agricultural development of Ohio counties.

In the earlier stages of county agent work, many people looked upon him largely as an adviser on farm practice. They were interested in having him visit their farms and talk over with them their problems found there. There is still a large call for this kind of work, but the point of view of the peo-

ple has changed somewhat, and the development of the Farm Bureau is enabling the agent to make more definite plans and enlist the cooperation of community leaders in the development of those plans to a greater extent than ever before. Briefly stated, the big job of the county agent is to help the farmers in the different communities discover the fundamental problems of their farms, and to organize those farmers so that they may solve these problems in a satisfactory manner. This of course, calls for a broader view of the situation than was formerly the case, and requires that a man who is successful as a county agent now, be a real leader who can establish the confidence of the people of the county, and help them to help themselves.

As an illustration of this method of work, suppose that in a given county the farmers and the county agent concluded that one of the big problems was that of improving live stock in the county. In some cases the county agent has been sent from the county to buy and bring into the county pure-bred stock for the use of the farmers. This no doubt, added some valuable animals to the county and was of considerable service. Where the work is rightly organized, the county agent and livestock committee of the county or community will decide about the livestock needs, and some farmers, or committees of farmers, will do the actual purchasing. In this way the men are being helped to take care of themselves which is vastly more important than that they have better stock, important as that is.

At present, practically all of the county agents are developing programs of work by getting in touch with the communities, and having appointed the committees responsible for the work to be carried on in those communities.

The chairman of the community committee along any line will constitute a county committee for the development of the work in the county as a whole. For example, the chairman of the crops committee in the different communities of a county will constitute the county crop committee. In many cases the chairman of these community committees are electing a member of the executive committee in the county organization to represent that industry.

The successful county agents are spending a larger proportion of time in the development of local leadership than ever before. This is not always the easiest way to carry on a given piece of work. In many cases it would be easier for the county agent to do the thing himself than to get the local people to take responsibility for their own communities. An instance of this is found in the project for the increased use of lime, which is very general over the Eastern part of Ohio. It is probably easier for the county agent to visit a large number of farmers and get them to send in an order for lime, than it is for the agent to get local leaders who will agree to take responsibility in this matter. But in order that the work may continue, it is absolutely necessary that these local leaders be selected and that they take care of the matters of their own communities. In so doing, the lime situation has not only been helped, but farmers have been selected who will take responsibility along other lines as well as this. No county agent can push at any one time all lines of work in the county, for which there may be calls of real need. The best that he can do is to push a few and have local leaders developed to help carry on the plans of work.

The Farm Bureau in Ohio is an established institution in its own particu-

lar field of work, and with the development of the State Federation and the National Federation of Farm Bureaus, we have an organization for the development of Agriculture which will find its place as time goes on. The county agent will cooperate with these organizations in the development of the educational program in his county, and these organizations in conjunction with others such as the Grange, may be able to take care of certain phases of work which at times have occupied a considerable portion of the county agent's time.

For any man trained in agriculture, the position of county agent offers one of the largest fields for service and one of the greatest positions of responsibility. His contact with people is direct, and the result of his success of leadership is apparent. It is no place for a man who lacks in well balanced judgment, or the ability to work with the people, but for a man who likes folks, and has sincere interest in the development of agriculture, and the ability to draw men to him, there is no greater opportunity at the present time.

THE AMERICAN FARMER AND THE GRANGE

By ORMANN R. KEYSER, Master of University Grange.

THE American Farmer has an important part to play in this period of readjustment and reconstruction. Upon him, accordingly as he plays his part on the stage of readjustment as a true blue patriot, a whole American, or as a bolshevik, depends not a little the welfare and happiness of the whole nation as well as his immediate rural community. We believe every whole hearted American farmer desires to put forth all his effort in some such way as will best bring about conditions and social relations most satisfactory to not only his rural neighbor but his city cousin also. That was the spirit of our forefathers upon whose ideals our beloved nation was founded. Now, what methods may he use and through what channels may he exert his forces in order to bring about the desired end?

"In unity there is strength." The American farmer is one of the most independent of any of the privates in this great army of citizens of the United States. He voluntarily labors daily from dawn until, many times, long after the silvery twilight is upon him; con-

tributing his portion to the vast amount of resources that must necessarily come from the soil for the subsistence of the nation. He is not only a private but a "non-com," directing his helpers and advising his neighbors. Moreover, he is a "commissioned officer," when he and his neighbors join hands with the object of a better America according to the principles as voiced in the language of the "Declaration of Independence." Then is when he does the most good, when he does his duty. Certainly no American farmer can fail to recall the story of the bundle of sticks in his old school reader.

Innumerable farmers have waked to the grave necessities and responsibilities that confront them; some sufficiently, many insufficiently. Many have formed and aim to support their several organizations having as their object the profitable returns for their labors, a higher level of education, proper standards and rural conditions. Surely no one can deny any of these as the farmer's just dues. Vast numbers have linked themselves with that great chain of

farmers known as the Grange, the Order of Patrons of Husbandry. No derogation, disparagement, or criticism is expressed or implied toward any organization that seeks to function directly to improve the farmer's social and financial conditions, to bring to him the direct influence in public affairs he justly deserves. For we are in accord with all of them. However, it does not seem possible that the farmer can accomplish the end he desires in the shortest time by striving with so many different organizations. An organization that has withstood the rigid test of the consecutive years of over half a century is certainly a permanent, worthy institution.

Following the war between the sections there existed grave dislocations of business and industry. Grave strife was prevalent throughout the country, generally. It was out of those conditions that the Grange was developed and grew. Those conditions as they were then are similar to the existing conditions of today; the difference being that those of today are of vastly greater dimensions, the whole world being involved, which will make readjustment much more difficult, as is already being experienced, and the time required will be even longer than that needed for readjustment following the days of the Civil War.

The Grange was created and developed out of those times of strife and readjustment. It was conceived with the idea of aiding in bringing about, as speedily as possible, a most satisfactory re-establishment of the affairs of the Republic. Since the problem of readjustment that is in progress today is of such vast proportions it is evident that the Grange has as much, and more, to do as it had in the days of its formation.

Many farmers' organizations grew

out of those troublesome times following the close of the rebellion and on down through the panic of '73, the eighties and nineties. Many of them lasted no longer than the first spurt of enthusiasm; while others operated a number of years. But the only one that survived more than fifteen years was the National Grange of the Patrons of Husbandry. This organization has developed its real leadership, stood up to the mark it had set and fought the fight for the farmers of the nation, and it came out, weakened to some extent, but alive and prospering, until now it extends into thirty-three states of the union. Just another of such contests is immediately ahead of the Grange. It must wage another great fight for American agriculture before we reach the end of the present conditions throughout the union and even the world as now passing.

Turn to the General Objects as set forth in the Declaration of Purposes and we readily see why the organization has been able to survive the test of the years. "We mutually resolve to labor for the good of our Order, our country and mankind." It not only involves the broad object of fraternity, but that of humanitarianism also. In exercising its sympathy for all brothers and sisters of the order and for all the rest of the family of humanity of the nation. Further explanation of the survival may be plainly seen in the motto: "In Essentials, Unity; in Non-Essentials, Liberty; in All Things, Charity."

Others of the fundamental principles of the Grange besides fraternity and humanitarianism are the educational and social activities. The Grange has always engaged its serious attention with these four fundamental factors. The schedule of activities and accom-

(Continued on page 288)

SAN JOSE SCALE

(Are we sufficiently protected, if so how? E. W. Mendenhall, who has been Horticultural Inspector for several years, tells us in the following.)

THE San Jose scale is one of the most troublesome insect pests we have to contend with in the apple orchard and one of the most dangerous if allowed to go unchecked but very easy to control by the use of proper spray material.

The San Jose or pernicious scale is perhaps the most dreaded of the imported pests. As is commonly known,

ashy appearance, soon sapping the life and one by one the limbs die and finally the tree succumbs. The accompanying illustration gives some idea of the appearance of apple trees badly infested with San Jose scale.

If a portion of the bark is peeled back a pink or reddish spot will be seen where the poison has entered the base cells of the bark.



THE RESULTS OF THE SAN JOSE SCALE.

it was imported from China or Japan on some new varieties of plants and made its first appearance in San Jose, California, from which fact it gets its name.

The insect is so small that only the practiced eye can detect it in the early stages of infestation, at which time it looks almost the size and color of a fly speck, but multiplies so fast (from 1,000,000,000 to 3,000,000,000,000 in a season) that it soon covers an infested limb or branch, giving it a rough,

From San Jose, California, the scale was scattered all over the country in cuttings and nursery stock. It appeared in New Jersey about 1891 or 1892. It was first discovered in Ohio in Clermont county in the fall of 1894 and later an outbreak was found on Catawba Island, in one of the largest peach growing sections in the state. The San Jose scale was discovered in the United States as early as 1870.

It can be found in nearly every state

(Continued on page 288)

OUR FARMERS NEED BOOKS

By F. ELLISON ADAMS.

THE United States Bureau of Education recently compiled statistics which show that 2,170 of the 2,964 counties in the United States do not contain a public library of 5,000 volumes or more. This is not astonishing when we are told that the libraries of the country receive an income of only \$16,500,000 while an adequate income would be six or seven times that amount. But an active movement is on foot for the establishing of county libraries throughout the entire country—the opening up of a complete library system to the sixty million or more Americans who live on farms or outside of the big cities. Then every farmer and his family, no matter in how remote a place he makes his home, how difficult to travel are the roads, or how small his community may be, can have books delivered to him at his door.

This movement is being fostered by the American Library Association which during the war supplied more than seven million books to the men in uniform here and overseas. In its enlarged peacetime program the A. L. A. will promote, as one of its principal features, the establishment of county libraries in every state in the union.

This program includes the increasing of the supply of reading material for the blind, the development of better citizenship, and the giving of an adequate library service to our Merchant Marine.

County libraries are now operating with much success in the few states in which they have been tried out, California, Maryland and Ohio, in particular, having proven to their own satisfaction the value of such libraries. The circulation of all kinds of books is grow-

ing rapidly among the rural population of those states, and in California 42 of the 58 counties already have adopted the county library plan.

One of our best authorities on the subject, Dr. P. P. Claxton, United States Commissioner of Education, tells us that he considers "the county library plan an important stage in the educational development of the country."

"Generally speaking," said Dr. Claxton recently, "the cities of the United States are well supplied with library facilities, but there still remains the great problem of giving the rural citizens the same opportunities of contact with the world of books as are enjoyed by his city brother. Personally, I believe that the inhabitants of rural districts profit even more from reading than do those who live in the centers of population. My own experience, as well as that of other educators, has been that country people read better books than townfolk; they read better books and get more out of them."

Now that the war is over and peace has come back, the American Library Association has turned its efforts from war work into other channels, ready to give us the full benefit of its forty years of experience and the cooperation of its membership of 4,000 active librarians in all parts of the United States. The success which the organization had during the war in circulating books among our fighting men inspires us with confidence for the accomplishment of the Enlarged Program. The A. L. A. plans to raise a fund of two million dollars this year to carry out the work, this money not to be obtained by a campaign or drive, but by the librarians,

(Continued on page 290)

EDUCATIONAL VALUE OF THE DAIRY SHOW

By D. S. KOCHHEISER.

THE high educational value of the National Dairy Show is well known by those who have attended it, but not so well known by those who only read about it. I believe there are many who should change from the second class to the first, and especially would I like to see more college students who are specializing in dairying attend the National Dairy Show.

Students who visit this greatest of all dairy shows will feel as did the members of the Ohio State University judging team, who paid all their own expenses to Chicago in order to compete in the judging of dairy products. I have just said that they went to this expense in order to compete in the judging, which is true, but at the same time the boys had decided that the National Dairy Show was something they should see, and there was so much of interest to them that they remained until Friday instead of leaving on Wednesday as they had intended to do. The expense of such a trip is rather a large item to a student who is paying his own way thru school, but each member of the team made the remark that he could not have afforded to miss this great Show, and that if at all possible he would return next year.

If the National Dairy Show meant so much to these few men, why do not more who are interested in dairying attend? The National Dairy Show should be to the dairy student what the Fat Stock Show is to the animal husbandry student. There is no place where one could study dairying to greater advantage.

But of greater value than the study of dairy animals and dairy machinery is the opportunity to meet the men who

are today's leaders in the dairy industry. Students of today will be leaders of the industry tomorrow, and the brief talks which they are able to have with the older dairy men at the National Dairy Show mean much to the students themselves and to the dairy industry in general. The student usually lacks confidence in himself and in the dairy industry, particularly in such times as these when to secure just prices the dairy men must fight their way, but after meeting the older men, and having an opportunity to see what a vast industry the dairy business is, the student sees more clearly the needs of such a business, his faith in the subjects he has taken up is renewed, and he works harder to become of real personal value to this great essential industry.

Representatives of the various manufacturing concerns were glad to show their dairy machinery to the students and to explain all they desired to know along their particular line. At the large creameries of Chicago the students were given the privilege of a visit over the entire plant, where representatives of the company gave them every personal attention and made the visit as profitable as possible.

The members of the judging team were well pleased with the way in which the officials handled the contest, and altho the team did not come out as well as it would like to have done, the boys were satisfied with the results and are determined to do all they can to aid in encouraging those who try for the team next year. This means that the College of Agriculture of the Ohio State University will again be represented by a strong judging team to carry away its share of the honors.



OF
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AN APOLOGY

We want to make an humble apology to our readers. As you all know the STUDENT came out way behind the time when it should have appeared. Sometimes it seems that all the difficulties appear all at once and while no one was really to blame nevertheless the magazine had to suffer. So we hope that these various obstacles that are bound to arise from time to time will not in further issues be such unsurmountable stumbling stones.

WHY NOT A FORESTRY COURSE?

In these days of high cost of living, uncalled for expenditure, unlimited extravagance and destruction of our natural resources why aren't there a few courses offered in our college of Agriculture that will sort of check this mania for getting rid of that which we already have. In other words why can't we

have a course in Forestry just as we have one in Horticulture, Farm Crops, Dairying or Animal Husbandry. A course that will make the student acquainted with the waste of our trees and our forests. Wood and lumber already has shot skyward in price and unless there is something to stop this increased use it won't be long until we will be found without lumber. We need a Forestry course or courses to acquaint the students with the various phases of the work. It seems that a course in Forestry is as essential as some that are already required and one that has a possibility of filling a real need in our future planning.

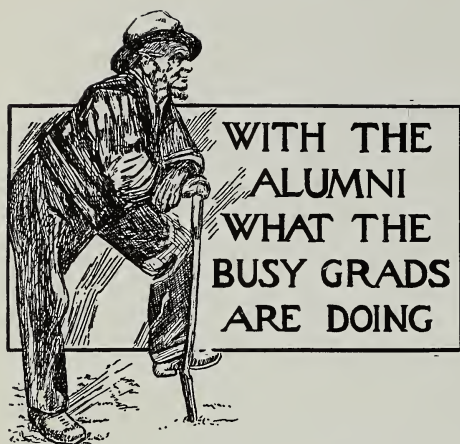
LET'S COOPERATE

One Business End of Farming is Cooperating. It is absolutely essential under present day conditions. In early times the farmer was self-sufficient, today he is not, due to the great strides of civilization. Hundreds of improvements are needed to keep the individual farmer in the "swim." Labor unions have brought on strikes for more pay and shorter hours. This has curtailed production thus increasing the prices of farm equipment in some cases many fold. How are the farmers to meet this increase? Individual buying and selling creates such competition that farming in some localities is becoming unprofitable. Unfortunately some localities are not yet fully cognizant of this sad fact.

As to the remedy, there is only one—COOPERATION both in buying and selling. The Gleaners in Michigan have shown us some of the possibilities along this line. In almost every community today in Ohio some sort of organization has been established; threshing rings, cooperative stores, farmers cooperative elevators, and lastly that which is undoubtedly the greatest the FARM BUREAU. When the farmer really realizes the importance of such organizations, and takes steps to cooperate and support them then and only then will he successfully meet the present days crisis.

THE PROFESSOR'S SALARY

We are glad that the Legislature has seen fit to turn the Students fees over to the salaries of the professors instead of letting the money go into the state treasury. Any one knows our teaching force is underpaid at the University. We have already in the past ten years lost too many good men. We are all human and so are the professors. If our fees will help them out, all well and good. However, as students, we hope the Trustees don't take this opportunity to increase the fees of the students unjustly or unduly, and we don't believe they will. We are against anything that will work to hinder the poor boy or girl from getting a college education. At present our school is very reasonable and any one who has got enough energy and determination in them can get an education, and we are glad that we have many who are working their way through college. So we are emphatically against increasing the fees to hinder this same good bunch of students from obtaining long sought for knowledge.



Ed Risser, '09, and Louis Risser, '08, are farming near Columbus Grove, O.

J. Edmunds, '08, has joined the instructional force in animal husbandry at the University of Illinois.

Frederick G. Charles, '13, is connected with the horticultural department at O. S. U.

Paul Smith, '14, is meeting with decided success in farming near Montpelier in Williams county.

C. F. Glass, '13, has been appointed county agent of Warren county.

H. E. Otting, '13, is with the John Wild Evaporated Milk company of Columbus as superintendent of laboratories.

Breeding pure-bred Holsteins is the line of work Harry Lennbaugh, '11, has decided on and he is making a success. He is located near Grove City, Ohio.

Mr. and Mrs. C. W. Hendel of Reading, Pennsylvania, have announced the engagement of their daughter, Elizabeth, to Mr. Dallas D. Dupre, Jr., Mr. Dupre was graduated from the college of horticulture, Ohio State University, class of 1916. At present he is connected with the B. H. Farr Nurseries, Wyomissing, Pennsylvania.

Carl Fieldner, '12, is county agent in Williams county.

W. J. Hendrix, '10, is county agent of Darke county.

William Bembower, '11, professor of horticulture, and D. W. Griffin, '14, professor of agronomy, are now connected with the Ewing Christian college at Allahabad, India.

Horace M. Kidd, '19, and David S. Weaver, '19, accompanied the home convenience team which toured the state during the month of February.

H. E. Evans, '09, is connected with the state department of agriculture as orchard and nursery inspector. He is located in Troy, Ohio.

R. W. Kelly, '15, has recently been promoted to chief of the United States Insecticide Experimental Farm at Vienna, Virginia. J. E. Fouser, '16, is an assistant on the same farm.

J. E. Eckert, '16, is located with the North Carolina State Department of Agriculture at Raleigh.

Donald Hussey, '17, is located in Columbus, his home city, and is connected with a real estate agency.

Wayne Patrick, '18, is busily engaged with the management of some six hundred acres of Madison county's fine land. He is interested in pure bred Poland China hogs and is quite an extensive fat cattle producer.

T. J. H. Wiegand, '19, is located in Cleveland where he is connected with the main sales department of the "J. T." Tractor company.

J. E. Hoddy, '09, is horticultural advisor for the Louisville and Nashville railroad. His headquarters are at Knoxville, Tenn.

Harvey Smith, '17, of the 3rd Division, Camp Pike, Arkansas, expects to be discharged from the service in the near future. He went across as a second lieutenant and received a wound in the right arm while at the front. After the signing of the armistice he was pro-

moted to 1st lieutenant and was acting major in one of the large cities in the occupied area. His overseas service was one of the longest in duration in the A. E. F.

Earl S. Johnson, who completed the work for his degree this last semester, will resume management of Old Orchard Dairy Farm at Painesville, Ohio. He will return in June to take part in the graduation exercises.

Max T. Zahn, '14, is the proprietor of a flourishing greenhouse and nursery business at Mt. Sterling.

A. H. Snyder, '01, succeeds Meredith as editor of "Successful Farming."

J. C. White, '07, has been promoted to Prof. of Animal Husbandry at the Massachusetts Agricultural College.

O. C. Rogers, D. G. Swagner and R. W. Wells, all of class '16, are in the Smith-Hughes work. They are located at Stryker, Wellington and West Lafayette respectively.

Ray C. Donaghue, '08, is now a county agent in Illinois.

H. H. Davis, '14, is now connected with the Bureau of Farm Crops at Washington, D. C.

C. L. Burkholder, '15, who is professor of Horticulture at Purdue University, was married recently at Indianapolis.

O. P. Gossard and C. M. Hampson both of class '15, are connected with the Smith-Hughes work in New Bremen and Wapakoneta, Ohio.

H. G. Chambers, '18, is with the Ohio Moline Plow company as expert tractor man.

Lowell Sutermeister, '17, is secretary of the Chillicothe Bottling company, at Chillicothe, Ohio.

W. W. Smelker, '16, is sales engineer with the Cleveland Tractor company.

J. R. Stear, '16, is connected with the

Bureau of Entomology, Pennsylvania State Department of Agriculture.

O. D. Bliss, '16, is managing his father's fruit farm at Avon, Ohio.

Arthur J. Copeland, '15, is farm management demonstrator for the Montana Agricultural Extension Department.

John O. Barkman, '15, is teaching at the University of Kentucky.

Herbert E. Otting, '13, is superintendent of laboratories for the Nestles Food company, New York City.

Orville A. Jamison, '12, formerly connected with the Massachusetts Agricultural College at Amherst, now is manager of a milk plant in that state.

Harry Linebaugh, '11, is engaged in dairy farming near Grove City, Ohio.

E. F. Rinehart, '10, is connected with the Animal Husbandry Department at the University of Idaho.

J. M. Cadwallader, '10, is head of the Dairy Department Louisiana State College of Agriculture, Baton Rouge, La.

William L. Cleavenger, '06, has a position with the Dairy Department, U. S. Department of Agriculture. He is engaged in extension work in Tennessee and North Carolina.

James W. Hammond, '06, is with the Animal Husbandry Department at the Ohio Experiment Station.

H. W. Nisonger, '14, is a Smith-Hughes teacher at Grove City, Ohio.

Harvey Byers, '19, is teaching in a Smith-Hughes school at Ashland.

O. E. Heering, '19, is a Smith-Hughes teacher at Cadiz, Ohio.

Ernest D. Waid, '06, is manager of a large dairy farm near Boston, Mass.

R. W. Harned, '06, has a position as professor of Entomology at the Mississippi A. and M. College.

C. R. Runk, '19, is a Smith-Hughes teacher in Bethel township, Miami Co.

Home Economics Department

MISLEADING ADVERTISING

Miss Lelia Booher of the Department of Home Economics has recently made a study of Misleading Advertising which is particularly associated with the household. The continued rapid development of commercial advertising has led to a scientific and comprehensive study of its many phases, and there is a vast amount of literature relating to the psychology of advertising in which field it is assumed by the author that this discussion would naturally be placed. She has not aimed in her discussion to be too critical nor to condemn the whole principle of advertising or of legitimate advertising which leads to the satisfaction of men's desires. It is that ineffective deceptive kind of advertising to which consumers have the right to object which she has touched upon.

It is the general purpose of advertising to attract attention and gain the support of consumer. Advertising, however, becomes illegitimate and misleading when it seeks its end by a false or deceptive representation of the product in question. In so far as possible Miss Booher has selected and described definite and specific cases, so that the reader may judge the evidence for himself.

Advertisement is the only way to place the goods before the public and the most economical way is through newspapers, circulars and magazines. In this way it reaches the consumer direct and thus has advantage over the old method of employing traveling salesmen to represent a product. A poor advertisement may be at the same time misleading, but not necessarily so.

A misleading advertisement is an invention or plan by which the consumer can be tricked into believing it is honest. It disguises the truth or conceals part of the story. Externally it appears striking and truthful but upon investigation the trick and internal unfounded claim can be revealed. Each example appeals to some psychological impulse of human nature and it is from this standpoint that the problem was developed. The average reader is yet too prone to think that anything on the printed page is unquestionably the truth.

The first psychological impulse which has been considered is the impulse to be scientific. Examples of this are, Quakers Oats, Purity Oats, Lowney's Chocolates and Domino Rice. Their claim to superiority over other types of food-stuffs such as meat, eggs and milk is made on the basis of their calorific value in relation to the cost. The term nutritive value cannot be measured in calories alone. Nutritive value includes the regulation of body processes, the growth and repair of tissues as well as heat production. It is unfair to determine the whole nutritive value of a food by the much misused calorie.

A second general class of misleading advertising is that intended to appeal to the psychological impulse as being official or legally authorized. An example of this was noticed at the Illinois-Ohio football game of 1919. In a long line of automobiles, almost everyone had a red tag on the wind shield similar to a police order to report at headquarters for traffic violation but upon investigation it read something like this, "This is to warn you that you are to

appear before the L—— Theatre on Nov. —, 1919.” It was a disguise to attract attention and advertise a certain performance at a theatre. Yet another of this type is the night letter advertisement.

A third general class of misleading advertising based upon psychological impulse is the impulse to avoid pain. This suggests at once the sure-cure, painless and quick-relief patent medicines recommended to cure diseases far beyond reach of our most advanced scientists.

There is a general class of misleading advertising which attempts to appeal to our impulse to be patriotic. It is a noble thing to be patriotic but everything that poses as patriotism is not true patriotism. The Boston Garter is claimed to be a patriotic gift, but it is inconceivable that man's love of country should be increased either by giving Boston garters or receiving them.

A most human instinct is touched upon in the class of misleading advertising which appeals to the impulse to avoid work. An advertisement for Purity Oleomargarine says, “Come out of the kitchen! Purity Margaine will help you do it, it put joy in cooking and baking and puts money in your purse.” It avoids telling why Purity Margarine aids you to come out of the kitchen. One has to use butter, lard or a substitute but one does not take longer to use than another.

There is a group of advertising which appeals to the impulse to save. The example given for this is the Benjamin Two-way Plug. Its claim is, “Make single sockets, double workers.” If it is intended to convey the idea that two lights can be lighted from the same socket with the same cost as one plug, it

is quite deceptive for the electric current for this sort of plug costs more than for a single plug in a socket.

More and more on the decline is the impulse to get something for nothing.

To distinguish between misleading and stupid advertising, an example of the latter class is discussed. An advertisement for Liquid Veneer starts out with a big picture of the world champion cow. Without reading on it would be a puzzle indeed to understand any connection between Veneer and a cow. The excuse given is that both are world champions and that Liquid Veneer in some way made it possible to acquire the greatest herd of pure-bred cattle in the world. Just who decided that Liquid Veneer was a world champion is not told. The whole advertisement is criticised as being both disgusting and ineffective.

It is evident that an honest, attractive advertisement produces results and it is unnecessary to mislead the public through deceptive and fraudulent advertising.

It is also evident that many stupid advertisements aim to associate the advertised goods with something of which the quality and desirability are known.

It would appear that fraudulent and misleading advertising was practiced to a greater extent in exploiting food than clothing.

Misleading advertising is closely associated with the psychology of mental activity since it seeks entrance through many human impulses all to the same purpose of a favorable reaction.

The more nearly the advertising is to the real truth the more readily it seems reasonable and likely to be convincing and to be supported by customers.

AGRICULTURAL ENGINEERING DEPT. TO SUPERVISE LARGE DRAINAGE PROJECT

AT Proctorville, Lawrence County, there is a community in which the establishment of an adequate system of drainage is imperative so that the farmers may, with some degree of satisfaction, use their land advantageously. In order to establish this permanent drainage system it will be necessary to construct three large ditches each one mile long. Fifteen hundred acres will be involved in the project. This is an attempt by the farmers of the community to establish their drainage system without following the usual process of law in the courts.

"The Department of Agricultural Engineering will supervise the whole project," said Professor P. B. Potter, of the department, "the location of the drainage basin, the profile of the new proposed ditches and the estimates of the cost of construction of the complete system. The cost of construction will be assessed proportionately among the farmers involved according to the amount of benefit derived therefrom."

The work is an Extension project and will be carried on in cooperation

with the Agricultural Extension Department. Professor Potter will have charge of the surveying which will be done by student assistants who are now doing advanced work in drainage problems at the University. The farmers must sign an agreement to pay all local expenses incurred by those who supervise and do the work of surveying, laying out and planning the system. Professor Harry C. Ramsower, Director of the Extension Department, will act as Consulting Engineer.

Previously, the Department of Agricultural Engineering has laid out and supervised drainage systems on individual farms and plots as small as ten acre fields. However, this is the first attempt to manage a large community project of this sort. The possible difficulties that may arise because of the large number of farmers involved are fully appreciated, but it is expected that after the proportionment of the cost has been made there will be no objection, on the part of any one involved, serious enough to prevent the success of the undertaking.

TRACTORS BADLY DAMAGED BY FREEZING

During the recent cold weather, February 15th, several tractors and gasoline engines, in the Implement building, were badly damaged by freezing because of a lack of heating facilities. Expensive repairs will be necessary before the steam engine, two tractors, and three small gasoline engines can again be used for instructional purposes.

The three small engines were so badly damaged that it is necessary to replace all the parts such as the cylinder

and cylinder heads. Nine other engines were frozen but not damaged. All the piping in the building was bursted. The extent of the damage done to the steam engine and the tractors has not been determined as yet. "I haven't had the heart to investigate, as yet," said Professor G. W. McCuen, "to determine just to what extent they are damaged."

Professor McCuen said that this lack of heating facilities has been contended with for five years and the condition has grown worse each succeeding year until this year the worst has come. It



Cletrac

TANK-TYPE TRACTOR

Added Power — No Increase in Weight
Larger output lets us lower the price

from
\$1585.00
to \$1395
f.o.b. Cleveland

The Cletrac's Day Is Here

THE tide has turned. The big demand today is for the small tank-type tractor—for the Cletrac—that goes further than the simple job of plowing and takes the place of horses over plowed ground and seedbed, working faster and at lower cost.

It wanted only the marvelous success of the Cletrac in 1919 to make the bulk of farmers everywhere put their "O.K." on the small tank-type. And now, because the Cletrac is the "fashion"—because a greatly increased output means a lower manufacturing cost—we can offer a better Cletrac and still reduce the price.

With more power and improved construction, 1920 will prove to any farmer, anywhere, that Cletrac farming is profitable farming.

The Cletrac, used alone or in "fleets," is the right size and type for almost any farm—the one tractor adapted to all conditions.

It has proved its ability to stand up to its work. And now that the public has recognized its worth, it is out in front to stay.

THE Cletrac now has a larger motor, yet no added weight or increased friction to eat up power. Its track is one-third wider, which gives it a lighter tread and a stronger grip on the ground.

The Cletrac steering device, an exclusive feature, insures positive power to both tracks all the time. That means full power on the turns, as well as straightway. A new water clarifier takes out all the dust that would grind the pistons and overheat the motor.

These and other features mean even better performance than before. Back of the Cletrac is the service of over 1200 distributors and dealers, with repair stocks near you and constantly increasing. Back of that is our purpose to make every Cletrac owner a booster.

A Cletrac means more kinds of work, more days in the year, and lower costs on every job.

The booklet, "Selecting Your Tractor" tells all about the improved, lower-priced Cletrac. We'll gladly mail you one upon receipt of the attached coupon.

The Cleveland Tractor Co.

Sales Offices at

New York Omaha
Oklahoma City
Cleveland Chicago
San Francisco
Los Angeles Atlanta
Minneapolis Spokane
Windsor, Ont., Can.

The Cleveland Tractor Co.

19123 Euclid Ave., Cleveland, O.

() Send me your booklet,
"Selecting Your Tractor,"
() Send me name of Cletrac dealer

Name _____

P.O. _____ State _____

19123 Euclid
Avenue
Cleveland, O.

Largest producers
of tank-type tractors
in the world

seems that the expense of repairing frozen machines, such as is necessary this year, would be greater than the cost of providing the heat for the building. Furthermore, the students are deprived of the opportunity to work with the machines even when they are not frozen. There has not been sufficient heat in the building to hold classes. Students wore their overcoats, caps or hats, and overshoes but the classes had to be dismissed. The writer believes that the men who come here and spend their time and money would be justified in taking some action that would bring about the proper readjustment of conditions at the Implement building.

UNIVERSITY GRANGE HAS OPEN SESSION

During the University Year 1916-17 the interest in the University Grange was quite satisfactory. There were more than 500 of the members of the faculty and students of the College of Agriculture who subscribed their names to the roll of membership. And the regular sessions were well attended. Then the United States was drawn into the great war and the College closed early in the spring. This, of course, curtailed the good work of the Grange for that year. The next year the Grange started good but the lack of heat and light prevented any activities again. Thus conditions continued throughout the period of the war. At the beginning of the present year the activities were again taken up, at a lively rate, under the competent leadership of Professor T. D. Phillips. One hundred and seventeen candidates worked through the four degrees and were accepted as new members. Once more the coal situation prevented the regular sessions. This semester sufficient

coal has been supplied and the Grange has been given the opportunity to make a new start.

The membership committee divided the members to make two teams for the purpose of getting as many as possible of the students and faculty of the Agricultural College to identify themselves with the order. The drive closed March 10. The team that secured the largest number of candidates will be entertained with a special program and banquet furnished by the losing team.

An open session with a special program, February 25, marked the beginning of the membership drive. The evening's entertainment began with vocal solos by Miss Virginia Reamer and Mr. Karl T. Woodward, then a reading by Miss Jeanette A. Bonar, of the department of Home Economics. Mr. C. V. Kendall conducted the following program with Mr. C. E. Gressle at the piano. 1—Camel-walk. 2—Basket ball Two-step. 3—Superstition Shimmy. 4—Cheek to Cheek Fox Trot. 5—Track meet Jazz. 6—Co-ed Waltz. 7—Circle Two-step. 8—Leap Year Waltz. 9—Hesitation Two-step. 10—Grangers' Delight Waltz. We are well aware that such a program looks like a dance but it was not. For instead of dancing there were nine different "stunts" and games played in a very interesting manner. No. 10—Grangers' Delight Waltz ended with a "feed."

The present membership of the University Grange is 250 and it is believed that the drive for new members from the faculty and students of the college has brought the number up to or over 400.

Guy Miller, '19, and "Bob" Gartner, '19, have been appointed county agents in Trumbull and Perry counties respectively.



The Feed that makes the Yield

Cut Down Your Cost

A number of the most successful dairy-men testified before the Federal Milk Commission, which has been fixing the price of milk from the producer to the consumer, that they had cut down their costs of production by feeding **Corn Gluten Feed** and wheat bran freely in grain rations they mixed themselves.

The Commission must have been convinced by what these representative good dairymen had to say about different feeds and the economy of a man's mixing up his own rations.

For, in arriving at the price it thought the dairyman ought to get for his milk, the Commission based its calculations on home-mixed rations in which Corn Gluten Feed was a principal basic ingredient.

Made by
Corn Products Refining Co.
New York **Chicago**

If you have not yet fed Buffalo Corn Gluten Feed, if you want to know more about how to feed it, and your dealer doesn't happen to have it, write us—giving his name.

Write to H. J. RORKE, Selling Representative, 904 Swetland Bldg., Cleveland.

THE BUSINESS END OF FARMING

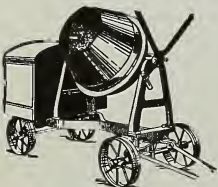
(Continued from page 263)

cooperation than one may think. The business farmer means the farmer who keeps accounts, who knows his cost of production. Throw this at our city critics and maybe we will understand each other better. Cost of production alone will result in many of the inefficient farmers and the ones who haven't realized they were at a losing game leaving the ranks. This in turn means higher prices for produce. Certainly the farmer can have no political influence if he works individually. He must be able, and must show some united strength to do much with these overlapping problems of taxation, transportation, etc.

As the farmer embarks upon his maiden voyage, he may do well to watch the course of some of the experienced navigators. The labor organization offers some object lessons. We agree with Mr. Campbell when he replies to Mr. Gomper's invitation to federate with labor to this effect: "Mr. Gompers we have lots in common with united labor, but at present your team is running away; we farmers will help you stop them if you wish; but we don't care to ride on your wagon." And yet I say therein are some lessons for us. When one man has the power to say to that host of workers, "stop" and they stop; and "start" and they start, we wonder at the secret of it all. Here are two secrets. Labor has a leader—not that we need a Sam Gompers—but that we do not need a man of Sam

Gompers enthusiasm, of his organizing ability, and a man of his spirit and service—for regardless of his incentive, he serves. Furthermore the laborer has put something into his organization hence he gets something out of it. No truer truism ever existed. I asked a miner what his dues amounted to; he told me and I figured that the he put into his union approximately \$35.76 per year. The carpenter I understand invests over double that amount. Yet many a farmer when asked for a dollar to join the Farm Bureau squeezes the money until the eagle squeals.

Men and women let's admit that we have made a failure of this single handed effort. If Marie Dressler can organize the chorus girls of New York City, and now talk, I hear, of a grave diggers' union, let's get busy. Let's organize, not to interfere with the rights of humankind but to steady the scales of industrial justice; not to strike, but to slowly and intelligently work out for ourselves a fair profit over and above the cost of efficient production. This proposition is much in the situation of the young man who had a sick mother-in-law. The doctor was summoned, and after a prolonged examination was asked how he found her. "Well, my boy," said he, "she is just at Heaven's gate." "Oh, Doc" was the reply, "Can't you pull her through?" We need leaders; we need some one to pull this proposition through. We have had enough cackling; let's have a little egg laying. Somebody started this war; let us farmers finish the job.



Concrete Mixers

With or without Power. Built in many sizes. Send for Mixer Catalogue and Book on "How to Make Concrete."

The JAEGER MACHINE Co.

113 Dublin Ave., Columbus, Ohio.

“He’s the Best Farm Hand We Ever Had”

Haven’t you often heard your father say that about one farm hand—that “old reliable” who is always on the job, doing more and better work than any of the others?

If your father knew that he could get all the farm hands he needed, each of them as good as that “best” one, he would grab at the chance, wouldn’t he?

When you begin operating your farm, after leaving school, you will hire fewer farm hands than your father does, but you will buy more farm machinery. You will have an opportunity that he didn’t have in hiring labor. You can be sure of reliability in all of your implements and machines.

The John Deere line is like a complete force of reliable farm hands. It is comprised of an implement for practically every farm operation. It has been a leader in quality for over three-quarters of a century. The success of the whole line is due to the high quality for each unit in the line.

Be sure to investigate the John Deere Full Line before you begin your career as a farmer. You will want the uniformly high quality that it insures.

JOHN DEERE, Moline, Illinois

AGRICULTURE AT ALASKAN EXPERIMENT STATIONS

(Continued from page 266)

has been carried on at the Kodiak station, located to the westward on Kodiak Island. Cattle and sheep have been kept here, while the swine have been kept in the interior at Fairbanks. With the swine not so much work has been done, as it is thought by many that the breeding of hogs is not best adapted to that county. Here so far all work has been done with the lard type of hog, while it is thought that the bacon type is better adapted for this cool climate, being not suitable for the raising of corn, while the bacon hogs are better rustlers and not so dependent on such carbonaceous feeds. Work with cattle has been carried on so far with two breeds, the Galloway and Holstein-Friesian.

The sturdy Galloway have been kept there for many years, while the Holsteins have been introduced only recently. The chief purpose of the Holsteins was for use in cross-breeding with the Galloways for the purpose of developing a race possessing the hardy qualities of the shaggy-coats and still retaining some of the superior milking qualities of the Holstein-Friesian.

At present this work is under the direction of W. H. White, a very capable man, graduate of the Kansas Agriculture College, and having former experience in the interior at Fairbanks. Work in cross-breeding was completely stopped when in 1916 one of the cattle died and upon examination showed generalized tuberculosis. As soon as possible, which was weeks later, the whole herd was examined, of which half were condemned as tubercular. This was a black eye for the cattle and today there are tubercular cattle at the station,

tho they plan to kill off all diseased animals.

At present by the Bang method of isolating infected animals the work of livestock development and cross-breeding is taking a new light. Several crosses have been secured and it is hoped that a new strain may be developed suitable to Alaskan conditions.

All work with sheep was suspended for two years by the fall of volcanic ash in 1912, during which time the herd had to be maintained in the State of Washington because the pastures were spoiled by the ash. The ash also caused the loss of many of the cattle and all but exterminated the flock of sheep. However sheep have been put on pastures by April 26 and the flock was not put in winter quarters until December 13. This shows that sheep can care for themselves for at least seven months which makes mutton practical at Kodiak.

In winter the livestock is maintained on silage, grain hay and commercial feeds. Silage is an important feed for the stock at Kodiak, two large silos being used at the station's ranch at Kalsen Bay. Native beach grass is the principal plant used for silage, but is often replaced by tall beach sedge or the native bluetop. The bluetop is the chief hay grass, being found on the hillsides and in "parks" varying in size from one to several acres in the cottonwood timber. The beach grass is found on the low level land at the head of the bays and in similar locations. The natives have a most curious method of harvesting the hay. The hay is generally cut high on the mountain side, done up into bundles in fish nets, and sent tumbling end over end to the bottom, where they are later picked up and carried home.

AVALON FARMS

(Registered U. S. Patent Office)

HOG-TONE

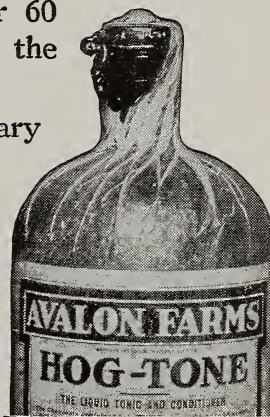


What Would It Profit Us

to offer *Avalon Farms HOG-TONE* on our 60 Days' Free Trial basis, if it failed to produce the results we promise?

The institution behind Avalon Farms Veterinary Remedies has absolute confidence in the efficacy of all its products—and is achieving a satisfactory measure of success by relying absolutely on the fairmindedness of farmers using Avalon Farm remedies.

Why not try *Hog-Tone* on your hogs? All you need do is fill out and mail coupon below. You pay only if you are completely satisfied that you got more fat from the same feed and that the HOG-TONE has eliminated the minor diseases that retard hog-growth.

Avalon Farms Company
441 West Ohio St., Chicago, Illinois.

W. O. Candy, President
AVALON FARMS CO., 441 W. Ohio St., Chicago, Ill.

I have.....hogs. Ship me immediately enough Avalon Farms HOG-TONE to treat them for 60 days. I am to pay nothing now except transportation charges. I agree to report results to you at end of 60 days and pay for the HOG-TONE at that time if it has done all that you claim. If it does not, I will return the labels to you and you agree to cancel the charge.

Name.....
Please Print Name

P. O.

R. R. No..... State.....

Shipping Point.....

Name and Address of My Druggist.....

Please mention THE AGRICULTURAL STUDENT when writing advertisers.

We might mention here the reindeer industry, altho in its infancy, but is rapidly becoming established. Within 200 miles of the station at Kodiak there is located one of the large herds of the government we hear so much about. To some well informed on the subject the reindeer are to Alaskans, Eskimos and whites alike what lowing kine are to the dairy farmers of Holland, humble sheep to the Australian wool-raiser, or beefy Shorthorns to the Texas cowman.

As to the outlook for agriculture in Alaska we cannot say, but the experiment stations have shown us that large-bodied, long-wooled sheep and the right breed of cattle can thrive and breed successfully in that climate. Insufficient funds and lack of equipment, tools, livestock, buildings and countless numbers of other necessities hold back rapid development of the country.

At present this country lays almost neglected, but as Alaska passes from the stage of exploitation to that of development these lands are destined to be much sought after for livestock raising.

THE AMERICAN FARMER AND THE GRANGE

(Continued from page 270)

plishments of the Grange in the interests of social improvement for the farmer, in the interest of a higher level of education for the country people, generally, are noteworthy achievements. The Order has striven constantly to promote farm life, to inculcate better farm home making. And its achievements in these undertakings stand out as some of the brightest pages in the history of the Grange. No other agency working in the interest of country life has equaled or approached the same degree of achievements.

The Grange advanced the theory that to improve the men and women engaged in agricultural pursuits it is essential to improve agriculture and all its activities. This has been its vital principle and it has supported and proved it in a practicle way.

An organization may be successful in improving the farmer's income and securing better legislation, yet it must be supplemented by a social, educational, fraternal organization formed for and by the farmer, to better establish his activities, to develop his leadership and thus maintain and promote his enterprises. We have such an organization in the Grange. It has successfully come through the test of the troublesome times of readjustment, strife, panics, in the field laboratories of the years of over a half century. Therefore, I believe every farmer and student of agriculture in this state and nation should identify himself or herself with the Grange.

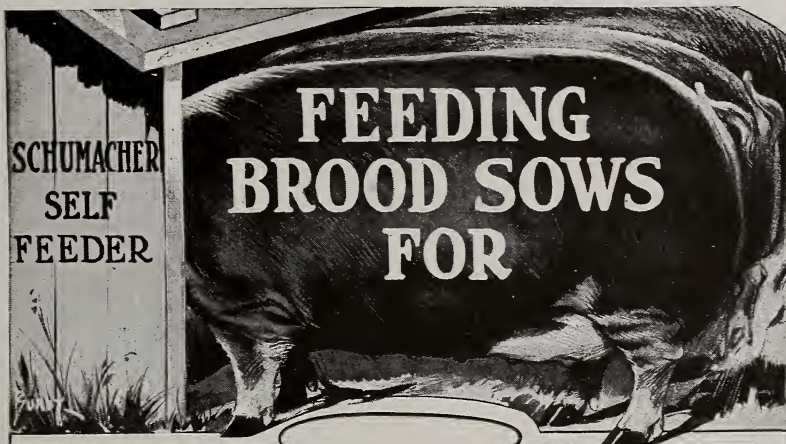
SAN JOSE SCALE

(Continued from page 271)

in the Union and nearly every state has its own infection laws and its laws regulating the shipping of nursery stock.

There could be great danger in the spread of the scale in shipping nursery stock from one place to another without proper inspection, but with the rigid laws and careful inspection very little danger comes from the nursery now.

The life history of the San Jose scale, *Aspidiotus perniciosus*, is quite interesting and different from most insects. The species is viviparous and produces no eggs, the females giving birth to living young. The insect winters on infested trees and shrubbery in



Bigger, Stronger Litters and Bigger, Faster Growing Shoats

The care and feed given the sow from the time she is bred until she farrows and then, both sow and litter until weaning time, has much to do with the profits you make from your hogs. If your sows are fed and handled right, bigger, stronger litters are sure to come. The pigs will thrive better, grow vigorously right up to weaning time. Then, if given the proper growing feed, pasture and exercise, bigger frames, heavier bone and better finish, with bigger profits, will result.

SCHUMACHER FEED

and the SCHUMACHER SELF-FEEDING PLAN have proven to thousands of hog men and farmers to be an ideal way of raising hogs. First, SCHUMACHER FEED, fed in self-feeders with tankage, puts brood sows in ideal farrowing condition. Second, it gives the little pigs the right start through the mother. Third, after weaning it develops bigger bone and frames, and with the addition of corn and tankage it will put on fat quicker and cheaper than anything you ever used.

Don't feed ear corn in a snow covered feed lot—it is too expensive—too much feed is wasted. The self-feeder with compartments for corn, tankage and Schumacher affords a much cheaper and better way.

The Quaker Oats Company Address Chicago, U.S.A.



the larval state and usually about half grown, both sexes being found.

In the spring it soon obtains maturity and the males which are winged appear and mate with the females. The number of broods is stated to depend on the length of season, as the females produce from 35 to 40 days old and continue to do so for about six weeks. If all were to survive, it is estimated that a single female would produce over 3,000,000,000 offsprings in a single season.

These insects are poisonous and quickly sap the life of the tree, which will often be dead by the next spring if the scale is not eradicated. The insect has been found on a list of plants, but on many of them it is accidental. Injury is practically confined to plants of the Rosaceae family, which family includes all our common deciduous fruits. Of the orchard trees, peach, pear and Japanese plum, apple and quince, while sour cherry, European plum and Keifer pear are less injured.

The larva do not differ essentially from other scales and fix in from 12 to 30 hours, depending somewhat on circumstances. At that time a thin white pellicle forms which soon turns yellow and later becomes gray around the edges. The insect is then a fixture. Its long thread like beak or sucking tube is driven far into the wood and by the means of it the louse gets its food. The San Jose scale differs in development from scurfy and oyster shell scale as it passes the winter partly grown beneath the scale. However, the scurfy and oyster shell scale passes the winter in the egg stage.

While the San Jose scale is one of the most dangerous insects and is doing a great damage to our orchards annually, it can be controlled by thorough spraying every year. Some years that

are warm and dry there may be considerable scale in evidence, and other years not so favorable for its propagation, there may be no scale visible.

The San Jose scale spray on a mild winter or early spring day, just before the buds begin to swell. Commercial Lime-Sulphur, one part to eight parts water, is the best spray material. Spray thoroughly to entirely cover the tree. The dormant spray of Commercial Lime-Sulphur is also effective against Scurfy and Oyster shell scale. In case of bad scale infection, spray the trees in the fall after the leaves drop and again in the spring before the buds open.

OUR FARMERS NEED BOOKS

(Continued from page 272)

library trustees and friends of libraries.

The county library plan, in brief, is as follows: It is proposed to establish at the county seat or in the largest town in every county in the United States one central library, stocked with an up-to-date collection of books and pamphlets, giving the best and latest information on subjects of special interest to farmers, and also carrying a wide variety of reading matter of general interest and fiction. In communities of any size in the county, branch libraries will be maintained of similar nature. The county library also will lend books to any number of deposit stations in the county, so that the smallest community therein, no matter how remote or inaccessible, will have a library of its own. Deliveries will be made by trucks or book wagons to country stores, toll-gates, post offices, school houses, private homes, or wherever the deposit stations are maintained, and upon request new collections will be sent out in exchange for the books on hand. In this way every farm-

Avery Six-Cylinder Two-Row
Motor CultivatorAvery Tractor
and Avery
"Power-Lift"
Plow

Double Your Cultivation with an Avery Motor Cultivator

With an Avery Motor Cultivator you can cultivate double or more acreage than one man can ordinarily handle with horses.

It has a variety of speeds that can be controlled to suit the size of the growing crop. You can creep along slowly when the crop is small and tender, or you can go as fast as you like when the crop is large. Hot weather and flies can't stop or bother it.

Cultivates Any Row Crop

Avery Motor Cultivators are built in two sizes—a six-cylinder two-row and four-cylinder one-row machine. The two-row is built in widths for crops planted in any width rows. Can also be furnished with various styles of front wheels so that all row crops, such as corn, listed corn, cotton, peas, beans, beets, potatoes, asparagus, tomatoes, etc., can be handled successfully. Can also be furnished with planting attachment for planting such row crops as corn, cotton, peas, beans, etc.

Write for the Avery Catalog and interesting Tractor "Hitch Book." Both books free.

AVERY COMPANY

6405 Iowa Street

Peoria, Illinois

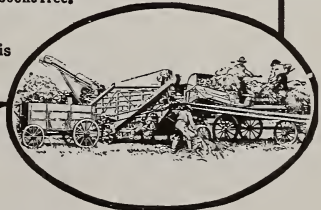
Branch Houses, Distributors and Service Stations
Covering Every State in the Union

In one locality within a radius of 18 miles, over 100 Avery Motor Cultivators are in use.

Besides cultivating and planting row crops, the Avery Motor Cultivator is also being successfully used for many other kinds of light field and belt work. It is adapted to more kinds of work than any other machine, and is one of the best motor farming machinery investments you can make.

The Avery Line

Also includes tractors for every size farm. Six sizes, 8-16 to 40-80 H. P. with "Draft-Horse" Motors and "Direct-Drive" Transmissions. Two small tractors, Six-Cylinder Model "C" and 5-10 H. P. Model "B." "Self-Lift" Moldboard and Disc Plows, Listers and Grain Drills, "Self-Adjusting" Tractor Disc Harrows. Also, roller bearing Threshers, Silo Fillers, etc.

Avery "Grain Saver"
"Yellow-Fellow" Thresher

AVERY

**Motor Farming, Threshing
and Road Building Machinery**

Please mention THE AGRICULTURAL STUDENT when writing advertisers.

er will have access to the entire collection. The expense of the service is to be met locally, by county taxation; the rate to be governed in each case by the needs of the county—but limited to a small assessment. In California, the state in which county library service has reached its fullest development, considering the great advantages afforded to the individual and to the community, “the small expenditure is readily seen to be an investment which will bring returns that cannot be estimated in terms of dollars and cents.”

Many remarkable stories are told of the mission which books have performed in out-of-way rural communities. They constitute the strongest appeal we have for the extension of the country library system.

There was a teamster in New Mexico, where libraries are very scarce, “who traveled over ninety miles through the mountains with thirty span of horses and three lumbering wagons of provisions for the stores on the Navajo reservation. He tried to beg books to read by the camp fire at night. The only three he could find, at the little jerk water station where he met the freight that brought in the provisions, was a small testament, a collection of dry essays, and ‘What a Young Man Should Know.’ The station was three hundred miles from the nearest library at Albuquerque, but the man’s disappointment was so great that the telegraph operator—a young woman—wrote to the librarian and asked her to please send, charges collect, any old books she had on hand which were too worn for further use in the library. She immediately received two large boxes full of dilapidated books and set to work repairing them. She pasted in all loose leaves and tightened each book securely in the back, then she made covers of

cardboard over which she sewed pretty cretonne, fastened each cover to its book and stencilled the name in ink on the front cover. The next trip the teamster made he had a dozen or more books of fiction to read. He was much pleased and the news spread among the lumber men, a few miles up in the hills, who quickly came for their share of books. Before the operator was transferred to another station she had repaired three other large boxes of books, and they went like hot cakes.”

In a remote and wild mountain settlement in Washington county, Maryland, between the foot hills of the Blue Ridge and the Cumberland mountains, “live the descendants of two families between whom a feud has been waged for several generations. Gradually they are becoming industrious, law-abiding citizens, though to this day, the men, when intoxicated, are the terror of the surrounding country. When the Book Wagon first visited these people, the men were seldom at home and the women were shy and fearful of strangers. It was with them as with the Indians . . . once a friend, always a friend. For, by degrees the library visitor has found a place in their lives and now every door is thrown open in friendly welcome on the Book Wagon’s semi-annual visit. From the beginning, one young married woman was more responsive than any of her neighbors. She was always eager for books for herself and easy ones to read to her children. One day, after three or four years had passed, she met the librarian with her usual smile and said: ‘Do you know, this Book Wagon is one of the best things we folks have? Since you’ve been coming around, my husband has learned to read from the children’s little books. Sometimes I have helped him with hard words, but now he can



The Service of an Electrical Research Laboratory

The research facilities of the General Electric Company are an asset of world-wide importance, as recent war work has so clearly demonstrated. Their advantages in pursuits of peace made them of inestimable value in time of war.

A most interesting story tells of the devices evolved which substantially aided in solving one of the most pressing problems of the war—the submarine menace. Fanciful, but no less real, were the results attained in radio communication which enabled an aviator to control a fleet of flying battleships, and made possible the sending, without a wire, history-making messages and orders to ships at sea. Scarcely less important was the X-ray tube, specially designed for field hospital use and a notable contribution to the military surgical service. And many other products, for both combatant and industrial use, did their full share in securing the victory.

In the laboratories are employed highly trained physicists, chemists, metallurgists and engineers, some of whom are experts of international reputation. These men are working not only to convert the resources of Nature to be of service to man, but to increase the usefulness of electricity in every line of endeavor. Their achievements benefit every individual wherever electricity is used.

Scientific research works hand in hand with the development of new devices, more efficient apparatus and processes of manufacture. It results in the discovery of better and more useful materials and ultimately in making happier and more livable the life of all mankind.

Some of the General Electric Company's Research Activities During the War:

Submarine detection devices
X-ray tube for medical service
Radio telephone and telegraph
Electric welding and applications
Searchlights for the Army and Navy
Electric furnaces for gun shrinkage
Magneto insulation for air service
Detonators for submarine mines
Incendiary and smoke bombs
Fixation of nitrogen
Substitutes for materials

Booklet, Y-863, describing the company's plants, will be mailed upon request. Address Desk 37

General Electric Company

General Office
Schenectady, N.Y.

Sales Offices in
all large cities

95-1401

No Risk of Loss

THE only form of Nitrogen immediately available as plant food for growing crops is

Nitrate of Soda


All other forms must first be nitrated in the soil, taking time, and resulting in costly losses through bacterial action.

Use 100 lbs. per acre for seeded crops; 200 lbs. for cultivated. These light dressings are easily spread over an acre and the amounts are very small compared to the acreage weight engaged in crop production.

WILLIAM S. MYERS

Chilean Nitrate Committee

25 Madison Ave.

New York 

read real good.' Today he is enjoying Zane Gray, Ralph Connor, Dillon Wallace, Jack London and Dr. Grenfell, or any books that deal with out-of-door life."

The following story, also from the mountains of Maryland, gives us another view of the question. "When the Book Wagon made its first trip to the mountains about Garrett's Mill, none welcomed it more eagerly than a little lad of ten years. Though the son of industrious but illiterate parents, he possessed a natural fondness for books and a bright, active mind that was the joy and frequently the despair of the rural school teacher. Up to this time he had borrowed everything that could be read from the neighbors, but, as few subscribed to a daily newspaper, his opportunities had been limited. Now, with a wagon load of books to choose from, he read more than ever, day and night, until his eyes began to trouble him. After several years, school had to be given up and his parents forbade his borrowing any more books from the Book Wagon. They felt he would never again be able to read and that his eyesight was seriously impaired. The librarian tried to persuade them to have his eyes examined at once. After a year of waiting, many hours of which Wilbur spent idly in a darkened room, he was taken to an oculist and fitted with glasses. Books were once more taken from the Book Wagon and the following winter the boy was sent to Hagerstown to high school, twenty miles away. As the library was not far from the railroad station, all his leisure time was spent there. This winter he is attending another high school nearer home where there is no library of any kind. Recently the library received from him a request for books that would aid him in preparing to uphold the neg-

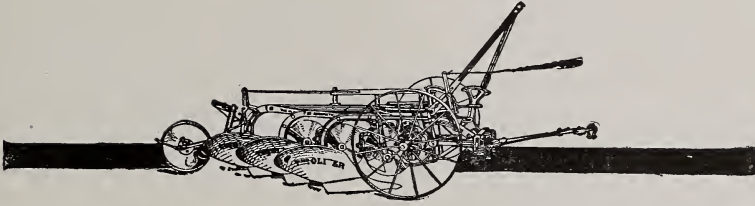
BROSMER'S

**1591 North High
Opp. E. Eleventh Ave.**

**HOME - MADE CHOCOLATES,
BONBONS, ICE CREAMS, ICES
AND BAKED GOODS FRESH
EVERY DAY**

We make a specialty of Butter Creams, Bitter-Sweets, French Pastries and Salted Nutmeats made fresh daily.

BOTH PHONES



OLIVER

No. 78

TRACTOR PLOW

It is our desire to be as temperate as possible in discussing the Oliver No. 78 Tractor Plow.

But it is not easy to tell even the plain facts in an entirely dispassionate way.

For we have knowledge of this plow in actual field work, which prompts us to unmeasured enthusiasm.

It embodies and expresses the best thoughts and the best practice of more than three score years of plow-building experience. And candor compels us to add our conviction that no other plow in the world has yet approached its wonderful facility of performance.



Oliver Chilled Plow Works

General Offices, SOUTH BEND, INDIANA, U. S. A.

Works at South Bend, Ind.

Branch House at Columbus, O.

ative side of the debate: 'Resolved, That Capital Punishment Should Be Abolished.' The request, legible in form, punctuation, spelling, etc., was all that it should be.

It is the farmer himself who must lend his good will for the realization of the nation-wide, county library system now being promoted by the American Library Association. Without his cooperation nothing can be accomplished; and as this movement is entirely for his benefit, a swell as for the benefit of his family, his community and the future generations he should give it his whole-hearted support.

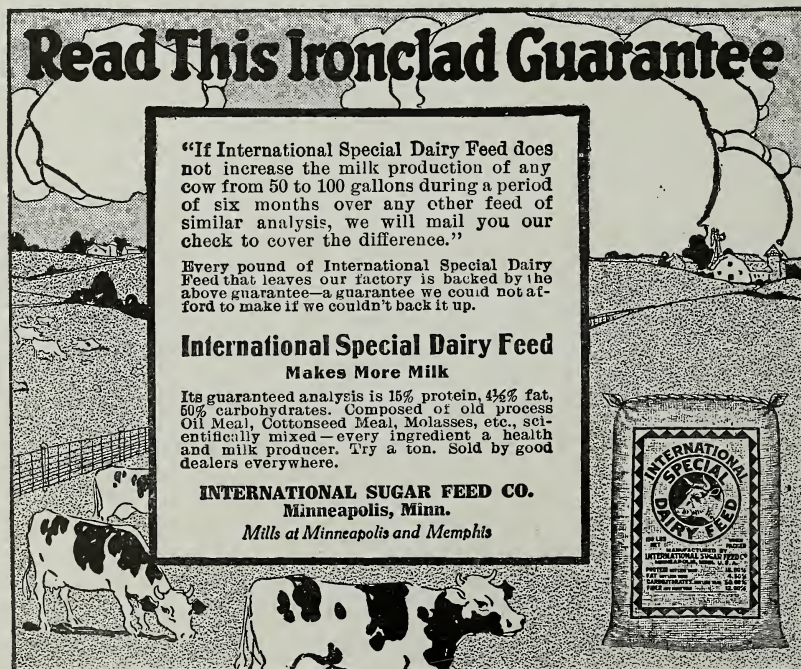
In speaking of the county library plan, the Hon. Clarence Ousley, Assistant Secretary, U. S. Department of Agriculture, sums up the situation as follows: "Librarians who are helping to bring to the scientists engaged in the solution of agricultural problems the

knowledge of past and present experiments and to bring to the farmer not only the learning of the scientists but also the culture and pleasure which comes from the reading of good books, are doing a noble service, which is not merely one of a class benefit but also of general and far-reaching value to the whole community."

CLEANING GREASE OFF METALS

It seems a simple matter to wipe oil or grease off unpainted or unlacquered metal surfaces, but those who have tried it know it is not; it doesn't come off clean.

Druggists sell an article known as acid dip that will take off grease and leave no streaks, stains or smuts. This is especially well worth knowing by those whose duty it is to keep polished metal clean and bright.



Read This Ironclad Guarantee

"If International Special Dairy Feed does not increase the milk production of any cow from 50 to 100 gallons during a period of six months over any other feed of similar analysis, we will mail you our check to cover the difference."

Every pound of International Special Dairy Feed that leaves our factory is backed by the above guarantee—a guarantee we could not afford to make if we couldn't back it up.

International Special Dairy Feed

Makes More Milk

Its guaranteed analysis is 15% protein, 4½% fat, 50% carbohydrates. Composed of old process Oil Meal, Cottonseed Meal, Molasses, etc., scientifically mixed—every ingredient a health and milk producer. Try a ton. Sold by good dealers everywhere.

INTERNATIONAL SUGAR FEED CO.
Minneapolis, Minn.
Mills at Minneapolis and Memphis

Pedigree only has never made any sire permanently great.

**But Countless Are the Sires That
Have Made Themselves Great.**

The sire that appeals to us is the one that builds his reputation upon the performance of his daughters and does not have to rely upon the reputation of his ancestors. Finderne Pride Fayne has proven himself through the work of his daughters, one of them making over 37 lbs. and another becoming leader of her state for milk production in her class.

You can buy a son of FINDERNE PRIDE FAYNE with a full knowledge that he is **making himself great.**

Meadow-Holm Farm

PETER SMALL
Chesterland, O.

H. B. GOODING
Tiffin, O.

THE VALUE OF A GOOD SIRE

"The good that men do lives after them." These words of Shakespeare have become familiar to all of us because of the truth that they express. Probably the expression would not have been so widely quoted but it would certainly have been just as true if Mr. Shakespeare had said "the good that bulls do live after them."

The best way to measure a bull's influence on his herd is to determine whether his daughters have been better or poorer producers of milk and butter fat than were their dams.

The Dairy Department of the New Jersey Agricultural Experiment Station is analyzing the Advanced Register records that it supervises, in order to determine whether the sires of cows tested have been an influence for the betterment or detriment of the breed. The

exact amount of each sire's influence is also determined.

Ne Plus Ultra 15265 it was found stood at the head of the list of Guernsey sires for the year ending July 1, 1919. The production of his daughters completing their records during the year averaged 25 per cent higher than the best records of their dams. When his entire list of tested daughters is considered, the comparison is even more striking. Seventeen of his daughters that have been entered in the Advanced Register also have dams with Advanced Register records. When allowance is made for under age records, the average yearly butter fat production of seventeen daughters is 706 pounds, while the average for the seventeen dams is 553 pounds; this is an increase of 153 pounds of butter fat, or 27 per cent.

Sometimes when we see the off-spring

A Dollar Isn't Much

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AND SEA FOOD,
SPAGHETTI, RAVIOLI, POLPETTE, ETC.

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of a bull enjoying the popularity and bringing the prices that the sons and daughters of Ne Plus Ultra 15265 are, we wonder whether this popularity is based on fact, or whether it is just one of those passing fads with no real foundation, with which the live stock industry has been afflicted from time to time.

New Jersey produces annually 100,000,000 gallons of milk valued at approximately \$39,000,000. If every dairy sire used in the state should increase the production of his daughters over their dams by the same percentage that Ne Plus Ultra 15265 did, it would mean an annual increase of 27,000,000 gallons of milk, with a value of about \$7,000,000.

The above figures tell only a very small part of the story. Ne Plus Ultra 15265 was bred to cows of high producing ability. This is shown by the fact that the seventeen dams mentioned averaged, on the basis of mature cows, 553 pounds of butter fat per year. If every sire used in the state had the same ability to sire production as Ne Plus Ultra 15265 had, the increase in value of dairy products would be greatly in excess of \$7,000,000.

Ne Plus Ultra 15265 was bred by F. Lothrop Ames, North Easton, Massachusetts. In 1900 he was purchased as a calf by J. L. Hope of Madison, New

Jersey, and S. M. Shoemaker of Eccleston, Maryland, and was used jointly by them for a period of nine years. His dam was Imp. Itchen Daisy 3d 15630, a cow that made, under official test, 13,638 pounds of milk containing 714 pounds of butter fat. His sire was Dolly Dimples May King of Langwater 12997, seven of whose daughters have Advanced Register records.

His breeding was excellent. But many bulls with excellent breeding have failed to accomplish what Ne Plus Ultra 15265 has accomplished. Many bulls also have had the power to improve greatly the producing ability of the herds in which they have been used, but were not given a chance, and their great prepotency was discovered after they were dead.

SMITH-HUGHES PROGRESS IN OHIO

In the Smith-Hughes Agricultural Department of one of the high schools in Ohio, there are twenty-nine farm boys enrolled. They represent an average acreage per farm of one hundred fifty acres. At the present price of land in that locality, each farm is worth well over thirty thousand dollars.

Prior to the Smith-Hughes Act of 1917, these boys and thousands like them, were being educated away from these farms worth practically a million dollars. The rural high schools up to

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Novelty McKinley Hengerveld, 183356

Sr. 3—Eight Months After Calving

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THE LOTHIAN-RIVERODE STOCKFARMS

Novelty, Ohio

Holstein Friesian Cattle

ALEXANDER WATT
Novelty, Ohio

LEWIS M. WILLIAMS
Chagrin Falls, Ohio

that time had nothing to offer the student but those subjects required by our colleges and universities for entrance.

Today these boys are attending high school, and in addition to the essential, and in place of the non-essential subjects that are required for college entrance, these boys are studying practical agriculture. This agriculture seeks to bridge the formerly wide gap between the farm and the school, and more important than this, it seeks to furnish the world with trained producers of food stuffs, rather than more consumers.

There are in Ohio today sixty such schools, and the number is not greater principally because of the lack of men capable of handling a job of this kind. From every part of the country, calls are coming for specially trained men to take charge of the agricultural departments of high schools, and the supply always falls far below the demand.

Isn't it worth while to train the future owners of our high priced land? In this time of high prices and unrest, isn't it important that the farmer be trained to be as economical a producer as it is possible for him to be?

Our representatives at Washington have realized the importance of this step, as have our State authorities, and they have passed laws enabling schools and communities to get the use of State and Federal funds to establish such departments and pay such teachers.

It remains for us to furnish the material from which these teachers may be made, and it is this lack of teachers capable of teaching and leading the farm boys that is handicapping this great movement at the present time. Let us awake to the opportunity and use our time and influence in enlisting men, that our agricultural colleges may be able to turn into such teachers.

EIGHT WEEKS' COURSE HOLDS COMMENCEMENT

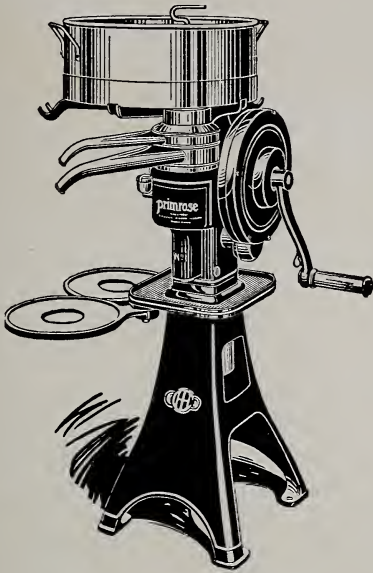
"The greatest need before our country today is to learn to save," said President W. O. Thompson in his class address before the graduates of the eight weeks' course in agriculture. "A man's strength is not determined by the amount of money he spends, but by what he saves or accumulates through wise investments," he continued. President Thompson discussed the various problems facing the nations of the world and emphasized the part each individual has in remedying the situation.

Following Dr. Thompson's talk, certificates were presented to the graduates by Dean Alfred Vivian and True G. Watson, secretary of the College of Agriculture. Dean Vivian, in presenting the certificates, said that this was the fourteenth class to complete the eight weeks' course, which extends from January 5 to February 27, and that every year the interest shown in the work increased in proportion to the number enrolled. "It means," he said, "that of the 102 students receiving certificates today, practically every one will soon be back on the farm, putting in practice the things he has learned here at the University." Music for the exercises was furnished by the Harmony Quartet.

The graduates got together for a banquet Thursday evening in Ohio Union. Speeches and musical numbers were included in the program. Ninety-seven men attended the gathering.

PUBLISH PROFESSOR'S ARTICLE

In a recent circular of the United States Bureau of Education there appeared "The Ohio Plan for the Training of Teachers and the Improvement of Teachers in Service," by Prof. W. F. Stewart of the department of agricultural education.



The 1920 Primrose at the 1918 Price

**A Study in Manufacturing and Farm
Equipment Economics**

Butter and baby shoes, underwear and eggs, coal and automobiles—prices of these things and other things have climbed and climbed since Armistice Day. Has the price of anything on earth stayed down?

Yes! Primrose!

Primrose Cream Separators are selling for the price of 1918—selling for slightly more than the good old price of 1914—before the war days. Primrose popularity has grown so rapidly that the big production permits the maintenance of the low price.

To the analytical student, Primrose Cream Separator price stability presents an interesting study in manufacturing and farm equipment economics.

To the practical farmer it presents an opportunity to buy an exceptionally high-quality product at an unusually low price.

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COLUMBUS, OHIO.

NEW EXPERIMENTS ON THE FERTILITY PLOTS

How many of the readers of this paper have visited the fertility plots on the University farm? You are not to be too severely criticised if you haven't, as they are just starting on their second year, but be sure to arrange to see this small experiment station on your next trip to Columbus. About twenty acres is given to these experiments, on the old Sells farm, where Sells Bros. Circus used to winter some of their horses, about a mile west of the campus. Plans are being made for several new experiments which will be started this spring.

One experiment is to determine the advisability of using substitutes for manure in vegetable gardening. Another will have to do with fertilizer treatment for canning crops, and a third with the function and value of organic matter in the soil.

Near the north side of the fertility plots is a lane arched with shade trees. As the trees would make reliability impossible with crops usually grown in such experiments, an experiment similar to Park Field, Rothamstead, England, with the modifications necessary for this locality is planned. Park Field had been used for meadow and pasture for at least 200 years before the experiments started, in 1864, and so far as is known no grass seed was ever sown upon it either before or since starting the experiment. It receives no cultural treatment but is now plotted, and the different plots receive different fertilizer treatments applied as a top dressing. The object of the experiment is to determine the effect of such treatment upon the nature of the plants that grow, i. e., whether they are legumes or non-legumes, and upon the amount of growth secured.

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Louis Methers says:

"The Perfection is the best rig ever invented."

DROP in at Louis Methers' Farm round about milking time some day and you'll find him out in the barn with his neighbors around him watching his Perfection Milker do the work. Every man who knows Mr. Methers knows about the success of his Perfection and wishes he had one, too. One Perfection in a community always brings many others as soon as folks see what a labor saver it is. "I cannot say enough for the Perfection Milker. It is the best rig ever invented," says Mr. Methers.

"You can use the Perfection two times a day the year 'round, and it never balks or refuses to work on Sunday night like some hired men do. I have used my Perfection for one year now and it has never failed yet. There is some

one here nearly every night that wants to see the Perfection and stay for milking time."

The Cows Like It

When it's late at night and the cows are hot and restless, it's mighty easy to get mad and kick a cow or milk her hastily and hurry away. The Perfection is the only hired man you can depend on to milk every cow exactly the same every day. "The cows like my Perfection better than hand milking," says Mr. Methers. "I had one cow that cut her teat all to pieces in the fence and the only way I could milk her was with the Perfection. I have one double unit but I am thinking of enlarging my dairy by Fall. With the Perfection I can milk as many cows as I can own."

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We will gladly send you names and addresses of Perfection owners. Write to them yourself and see what they tell you about the Perfection. We will also send free a copy of "What the Dairyman Wants to Know"—the great book that answers every question about milking machines. Write today.

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NEED ALL OHIO WHEAT AT END OF FIVE YEARS

Unless means are taken to increase the acreage of wheat yield to the acre Ohio, at the end of five years, will be consuming all the wheat produced in the State, according to statistics compiled at the Ohio Experiment Station.

During the past ten years the total average production of wheat in the State was approximately 30,500,000 bushels, with an average population of 5,000,000.

This made wheat enough to furnish a barrel of flour per capita and seed for the following year's crop, with 2,225,000 bushels to spare. However, since 1910 the population is estimated to have increased from 4,700,000 to 5,325,000.

The work of the Experiment Station has shown that it is now possible by economical farm practices to raise the acre yield of wheat in Ohio by at least

10 bushels annually or a total increased yield of 20,000,000 bushels.

Land at the Ohio Experiment Station has produced 35 bushels of wheat per acre for an average of 15 years where the soil has been properly limed, fertilized and manured.

This yield has been produced at a cost price per bushel cheaper than that of the average bushel of wheat grown in Ohio. The average yield in Ohio is about 15 bushels per acre.

SMALL TUBERS REDUCE YIELD—SEED EYES UNFIT

Small potatoes continuously selected for seed will reduce the yield of the potato crop, as shown by tests at the Ohio Experiment Station. In these experiments the larger-size seed produced 17 bushels more to the acre than the small potatoes.

Some of this increase may be due to the larger amount of seed required to plant an acre but only hill selection will weed-out strains that produce small tubers when the small tubers are used continually for seed.

Potato eyes alone are not generally recommended for seed. Plants grown from such seed are too frequently weak and incapable of yielding a good crop. The extra trouble of growing potatoes from such seed is also generally greater than the price will warrant.

When eyes are used for seed they must be carefully handled before planting and placed in very fertile soil. It is necessary to plant the eyes by hand whereas a machine may be used with the whole or cut tubers.

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Alternates, Like Milking With Hands



Imagine a man with **two hands** on each arm and you have the idea of the alternate action — milking **two teats** at each stroke.

Easy to operate.

Easy to clean.

The most sanitary milker (maid) made.

Thousands giving perfect satisfaction.

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descriptive
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The Universal Milking Machine Company, Columbus, Ohio

MINERAL REQUIREMENTS OF SWINE

All grain rations for growing swine require mineral supplements. The breaking down of swine, and the development of rickety symptoms, lameness and paralysis have been found to result from insufficient mineral nutriment.

Rations containing sufficient milk or tankage or leguminous roughage, however, do not require mineral supplements. When swine are fed on cereal rations there is urgent need for the element calcium, and possible need for phosphorus, in addition. These may be efficiently supplied by a half and half mixture of precipitated calcium and precipitated bone flour. Other less efficient carbonates and phosphates are available.

Mixing the mineral nutrients with the ration and allowing free access to mineral supplements as well, will tend

to increase the development of the skeleton with swine intended for breeding purposes. When swine are self fed there is a tendency to put on more flesh than skeleton to correspond, unless mineral supplements are fed mixed with the grain.

FAMOUS DELICIOUS APPLE GOOD FOR OHIO CULTURE

The Delicious apple, which sell at attractive prices in fruit stores and railroad trains, has been found to be adaptable to Ohio conditions. A greater part of the commercial supply of this apple is now grown in western states.

While not an unusually heavy bearer, an average of about 8 bushels per tree per year has been secured at the Ohio Station. This yield was produced from the eleventh to the twentieth growing year of the tree. Thus far the

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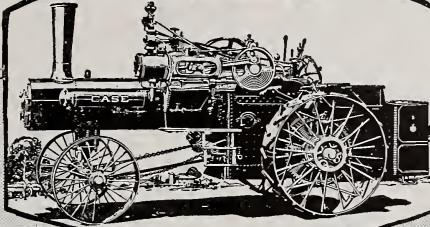
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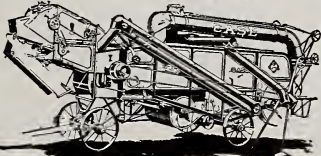
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Citizens 9402

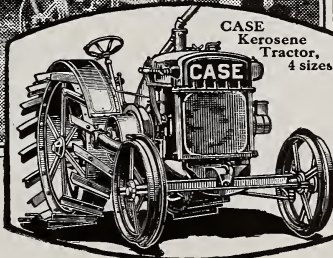
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CASE Thresher, 6 sizes



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Case Threshers are built in six sizes, ranging from the 20x28, suitable for the large farm or a group of small farms, to the great 40x62 the climax of the thresher achievement. Case, Galvanized, Steel built, Grain Saving Threshers are made in following sizes: 20x28, 22x36, 26x46, 32x54, 36x58 and 40x62.

All sizes of Case 'hreshers may be equipped with Case Self-Feeders,

Wind Stackers and Grain Handlers. All are alike in ability to thresh, separate, clean and save all grains and seeds.

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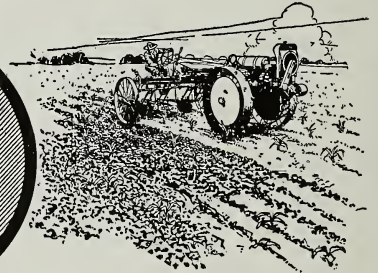
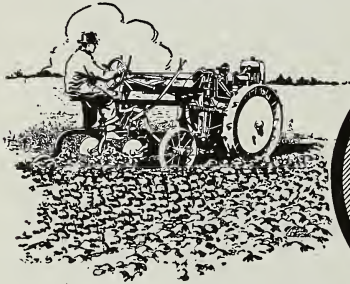
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UTILITY IS NOT SACRIFICED FOR PRICE

The Power of a Correct Principle



The principle of doing all field operations with one man sitting where he can watch his work is correct, or farming has always been done backward, and the operator would always have ridden or lead his horses instead of driving them.



The Moline Universal Tractor places the power of nine big horses where the horses stood—is driven just like horses are driven, from the seat of the implement, and hitched up to the implements just like horses are hitched.

NOTE—If desired you can use the "drag behind" or horse drawn implements you now have with the Moline Universal the same as with other types of tractors.

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Columbus, Ohio
Jackson, Mich.

Delicious has produced some fruit every year, although not always a high yield.

The variety attains good size and color and is of excellent quality when used for dessert purposes. There are extensive plantings of this variety in Ohio that have recently reached bearing age.

A bulletin issued from the Station describing the varieties of apples best adapted to Ohio, including the Delicious, is mailed free to residents upon request to the Experiment Station, Wooster.

C. C. Engle, '12, formerly with the New York Soil Survey is now a junior partner and production manager of the Crossley Mining company, Toms River, New Jersey.

R. E. Steen, '16, is a Smith-Hughes teacher at Olmsted Falls.

OHIO STATION ISSUES MANY RESEARCH REPORTS

More than 350 different subjects of agricultural investigations have been reported on by the Ohio Experiment Station, Wooster, during the past four years. These have been explained in the Monthly Bulletin, which is sent free to residents of Ohio, while approximately 40 technical bulletins have been issued during the same time.

With the Monthly Bulletin has been published an index which is also available to all residents of Ohio upon request.

Inquiries concerning soil fertility hold the greatest interest among Ohio readers, while information concerning insects, animal feeding, plant diseases, orcharding, farm crops and dairying, follow in close succession.

Considerable interest has been shown in the newer farm crops for Ohio, such

Choice Seed Corn

We can supply choice seed at a cost of about 70 cents per acre.

We have a number of varieties, including such popular sorts as **Reid's Yellow Dent, True Yellow Leaming, True Yellow Clarage, Livingston's Golden Surprise, Nellers Cattle, Johnson Co. White, Mammoth White Dent, etc.** Good, strong germination.

Now is the time to again supply your wants with your old, well-tested favorites. We feel that all varieties offered are very true to type.

Sample grains free on request. Mention varieties and quantities in which you are interested. Catalogue of 96 pages with "True Blue" descriptions tells when to plant and how. Free. Write for it.

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FOR FARM BUTTER OR CHEESE MAKING

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Dairy Preparations

PURE, concentrated, ready to use, absolutely reliable. Giving uniformly best results in the country's finest creameries and cheese factories.

For Cheese-Making: Hansen's Rennet Tablets, Junket Tablets (for Cottage Cheese), Cheese Color Tablets.

For Butter-Making: Hansen's Danish Butter Color (4 oz. and 1 oz. bottles), Hansen's Buttermilk Tablets or Lactic Ferment Culture for perfect ripening of cream for butter and milk for cheese and commercial buttermilk.

Sold by drug and dairy stores, or direct by

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Interesting treatises, "The Story of Cheese," J. D. Frederiksen, free on request.

as soybeans, sugar beets, Sudan grass, Kharkov and spring wheat.

In southern Ohio the subject of fertilizing orchards has paramount interest, while northeastern Ohio is given over to subjects regarding dairying and dairy farm crops.

An unusual interest is manifested in the more scientific problems, such as vitamins, mineral nutrition, special soil diseases and the breeding of better farm grains.

WHAT IS A POUND OF BUTTER WORTH?

Persons eating real butter nowadays are paying for it. The prices charged in the various stores vary widely, but all are much higher than before the war. Who gets the large end of the profit? is often asked; and invariably the farmer is designated as the profiteer. The verdict is pronounced by the great con-

suming public and that verdict is based on incomplete information. All the evidence the jury usually has in hand is the grocer's sales slip. The farmer, the producer, has not been heard.

The following is not a statement of theoretical cost, but costs based on figures gathered from a large number of farmers. It is an average gleaned from the accounts carefully kept, and while it may be high for some particular forms, it is low for others.

Butter produced in the winter months, November to April, inclusive, by the average farm herd, costs the farmer 73 cents a pound at present feed costs. The farmer is entitled to a small profit, which should be added to the cost to show what he receives. The rest of the price is tacked on as a pound of butter slides over the various avenues of trade to reach the consumer's table.

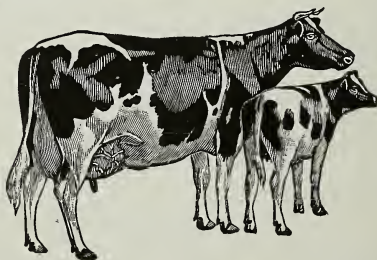
Does a 73 cent cost sound reasonable? Perhaps. But the farmer has no

Students May Readily Inform Themselves

as to the Productive Characteristics of the dairy Breeds and Their Competitive Advanced Registry Standing by Sending to us for a Free Copy of "Dairy Breed Comparisons No. 7."

This instructive, illustrated 24-page pamphlet contains illustrations of high record Holsteins, Guernseys, Jerseys, and Ayrshires, also the five highest 7-day Holstein records; a synopsis of yearly records from 600 to over 1,000 lbs. fat; the leading cows of each breed for yearly production in seven classes; ten highest record cows of each breed; the average yearly breed production from a summary of 2,387 Holstein, 4,086 Guernsey, 4,297 Jersey, 1,752 Ayrshire, and 121 Brown Swiss records.

Just drop a postal card.



Holstein - Friesian Association of America
F. L. HOUGHTON, Sec'y.
154 Holstein Building, BRATTLEBORO, VT.

Put Your Chicks on this Schedule

If you expect to have layers in December your chicks must be properly developed during the first six weeks. They must be supplied with the same balance of nutritive elements that they got from the egg for their first nourishment. Put your chicks on the following schedule and reap the profits that come from sturdy winter layers.

FIRST WEEK

Do not feed chicks at all for forty-eight hours. Keep them warm and dry. Nature has provided a feed for the first few days in the form of the remainder of the yolk of the egg which is drawn to the little chick's body just before it breaks the shell. After the second day feed Purina Chicken Chowder, dampened with warm water, sweet milk or fresh buttermilk, until crumbly, five times a day—at 7:00, 9:30, 12:00, 2:30 and 5:30 o'clock. Do not shift from sweet to sour milk or vice versa. Feed only as much as will be cleaned up. Remove and destroy damp Chowder after fifteen minutes.

SECOND WEEK

Replace the night meal with Purina Chick Feed, throwing it in a shallow litter of clean hay or straw. Continue four feedings a day of the damp Purina Chicken Chowder.

THIRD TO FIFTH WEEK

Discontinue the damp Purina Chicken Chowder, keeping dry Purina Chicken Chowder before the chicks in an open hopper all the time. Throw as much Purina Chick Feed in the litter as will be eaten four times a day. Get the chicks out of doors, on the ground, if the weather is warm and dry. Avoid dewy grass and keep the feathers dry. Keep the chicks hungry.

SIXTH TO TENTH WEEK

Change gradually from Purina Chick Feed to Purina Scratch Feed, mixing a little more Scratch Feed with the Chick Feed each succeeding day. Feed the grain feed in a litter three or four times a day. Keep dry Purina Chicken Chowder before the chicks all the time.

After the first week supply plenty of fresh greens all the time. Keep the water basins absolutely clean and filled with fresh water. Supply plenty of fine grit (coarse sand may be used the first week or two instead). Some poultry raisers keep fine ground limestone or oyster shells in hoppers.

Double Development or Money Back Guaranteed

The money paid for Purina Chicken Chowder will be refunded if baby chicks when fed Purina Chicken Chowder with Purina Chick Feed, as directed, do not develop twice as fast during the first six weeks as when fed a grain ration.

RALSTON PURINA COMPANY
ST. LOUIS, MO.

Ft. Worth

Nashville

Buffalo



Sold in
Checkerboard
bags only



Please mention THE AGRICULTURAL STUDENT when writing advertisers.

dark secrets to hide. His books are open, and here is what they show:

In those six months he produces 65 pounds of butter. He spent \$4.35 for 2.9 bushels of corn at \$1.50; \$12 for a half ton of hay at \$24; \$7.20 for 0.9 of a ton of silage at \$8; \$6.30 for 9 bushels of oats at 70c; \$1.63 for fodder roughage; \$5.75 for mill feeds; and \$1.27 for pasture and stalks. Add to that \$16.75 for 67 hours of man labor at 25c an hour (which is very low considering the unreasonably high prices paid unskilled labor); 60c for 4 hours of horse labor at 15c; \$5 for upkeep on buildings, taxes and miscellaneous expenses; and \$3.60 for 24 hours of his wife's labor in the home at 15c an hour (which also is low as may be determined by hiring domestic labor); and you have a grand total cost of \$64.45 for the 65 pounds of butter produced.

Yet the farmer will be fair with you.

He will deduct from this cost \$7.50 for the calf raised, and will subtract also \$9 for the three tons of manure produced. That makes the total cost \$47.95. Divide this by 65, the number of pounds of butter produced, and you will get so near to 73c a pound that you had just as well call it that.

The worst part of the story is that it cannot record in all instances that the farmer received even 73c. In most cases he gets less than that price and must stand the loss.

CONSERVING POLES AND POSTS

Timber suitable for telegraph and telephone poles, fence posts, etc., is becoming scarce and expensive. It is estimated by the Forest Service that sixty years hence will witness the practical extinction of such material.

At present about four million poles are being erected annually. Records

Spring Cleaning

Should be sent in early for best service.

GARMENTS RE-LINED, ALTERED, REPAIRED

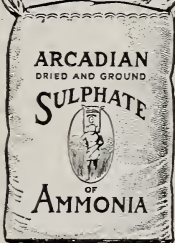
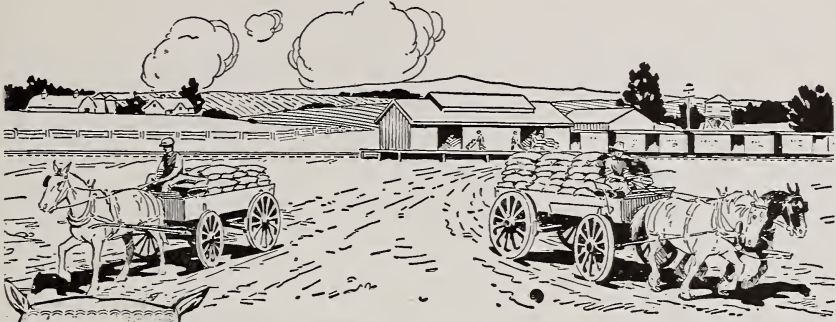
Clothes last longer when thoroughly cleaned by

LEHMAN, Dry Cleaner

12th Ave. and High. Plant Opp. Olentangy Park.

We insure your garments against Fire and Theft Loss.

Prompt Delivery Service—Both Phones



Top Dressing Talks

Which Source of Nitrogen is Best?

The advantages of Arcadian Sulphate of Ammonia are:

High Production: Pound for pound, **Arcadian Sulphate of Ammonia** will produce as much crop or more than any other nitrogenous top-dressing. It's dependable.

High Concentration: **Arcadian Sulphate of Ammonia** contains one-third more nitrogen than any other top-dressing. This lowers cost of handling, hauling and storing.

Quick Availability: **Arcadian Sulphate of Ammonia** acts quickly. The moisture in the soil immediately dissolves the crystals. In many cases a change in color of the foliage of plants has been noted within three days after application.

Non-Leaching: The ammonia is absorbed by the organic matter and by other soil constituents, and is not easily washed out, even from the lightest soils. It is made available by the same conditions of warmth and moisture that cause plant growth, and this

acts as a reservoir of plant food in the soil, yielding a regular supply of nitrogen as it is needed.

Fine Mechanical Condition: The crystals of **Arcadian** are fine and dry. There is no appreciable absorption of moisture and it does not cake into hard lumps. This makes application easy

and assures even distribution by hand or machine. No labor is required for grinding or screening.

These with other important advantages, including low price, make **Arcadian** the supreme top-dressing fertilizer. As a feeder of plants, it is **quick, enduring** and **satisfying**.

Write for bulletins on the proper use of **Arcadian Sulphate of Ammonia**.

ARCADIAN
Sulphate of Ammonia

Baltimore, Md.
Atlanta, Ga.

The *Barrett* Company

Medina, Ohio.
Berkeley, Cal.

AGRICULTURAL DEPARTMENT, NEW YORK.

compiled by the Forest Service show that 95% of all poles are destroyed by decay, 4% by insects and the remaining 1% by mechanical abrasion.

Scientists who have been giving the subject attention advise, as a result of experiments conducted by them, that creosote treatment applied to the ends of the poles and posts imbedded in the ground will lengthen the life of the poles as per the following tabulation:

White Cedar—16 years (untreated) to 30 years (treated).

Cypress—6 years (untreated) to 15 years (treated).

Chestnut—12 years (untreated) to 16 years (treated).

Pine—6½ years (untreated) to 20 years (treated).

Juniper—8 years (untreated) to 18 years (treated).

There are three methods of treatment adaptable to the purpose: The open tank method whereby only the butts of the poles are treated; the pressure process, used only on short poles; and the brush method which may be applied in the field as the poles are being set. The employment of the open tank method calls for the application of the treatment before the poles are shipped on the job.

As creosote and the labor required to apply it are much cheaper than new timber, it is needless to say that railroad companies, telegraph and telephone companies, farmers and all others using large quantities of timber for poles and posts are giving this matter much serious consideration. Even yet, however, entirely too many posts are being set untreated and unprotected. This is a form of business extravagance that is unwarranted.

Practical Knowledge

To know how to accomplish the desired results in the application of dairy husbandry is as valuable as to know what the desired results are.

Because thousands of users know the superiority of



Wyandotte
Dairyman's
Cleaner and Cleanser

and profit by this knowledge they are able to prevent the regrettable losses of milk quality that are certain to occur unless the milk containers, machinery and utensils are kept sanitary, wholesome and clean.

So valuable is the use of this cleaner and so little its cost that no one engaged in dairying or any of its branches can well afford to be without the assistance it brings.

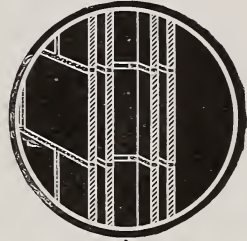
Order from your supply house, or write us. It cleans clean.

The J. B. Ford Co., Sole Mnfrs.,

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Insures Cow Health

THE insulating blanket of still air in a Natco stable wall prevents sudden temperature changes. It protects the health of your cows and keeps up the milkflow in uncertain weather. Natco Hollow Tile walls do not gather moisture as do walls of solid masonry, nor do they absorb grease, dirt or foul odors.



Section of Natco wall showing still air spaces

Natco Barns

are a permanent *investment* — not an expense. They need no painting and very seldom require repairs. They withstand severest windstorms and are fire-safe, being constructed of burnt clay tile. Natco walls are exceedingly strong. Masons lay up these walls very rapidly, easily handling the large-size units.

Whatever you intend to build, build it with Natco Hollow Tile. Many uses are pictured and explained in our book, "Natco on the Farm." Write for it today — *free*.

National Fire Proofing Company

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23 Factories assure a wide and economical distribution



Barn and Silos on farm of Geo. and Jos. D. F. Jankin, Easton, Md.

F-2

NEWS NOTES

The Saddle and Sirloin Club met at the Pavillion on February 24 and elected the following officers: Don C. Drake, president; C. F. Condon, vice-president; J. H. Knox, secretary; W. S. Mozier, treasurer, and Samuel Porter, sergeant at arms. After installation a membership and executive committee were appointed. Another feature of the evening was an interesting talk on Salesmanship by Samuel Haines.

Under the efficient direction of Prof. Falconer, cost account circles have been established in Medina and Greene counties. Details of cost of operation, expenses and income are kept on the record and a summary will be made at the end of the year. "This will be the most complete data on farm management problems ever secured," says Prof. Falconer, "and it will be continued for five years.

PUT USELESS EMPLOYEES TO WORK

In answering questions regarding means of reducing the high cost of living, Edwin T. Meredith, the newly installed Secretary of Agriculture, said that useless employees, no matter in what line they may be engaged, must be released from non-productive work and given an opportunity to become producers upon the farm or in the factory. "If this is done and if jobbers and retailers recognize the harm that must ultimately come from profiteering on the farmer and content themselves with a reasonable profit," he said, "the question of the high cost of living will largely solve itself to the permanent good of all. But unless the whole country—all business and all labor—does recognize this as a common problem and do the things necessary to solve it," he continued, "less and less will

Burpee's Seeds Grow



BURPEE'S ANNUAL FOR 1920
The Leading American Seed Catalog

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Burpee's Annual is a complete guide to the vegetable and flower garden. It fully describes Burpee Quality Seeds with a hundred of the finest vegetables and flowers illustrated in the colors of nature. If you are interested in gardening, **Burpee's Annual** will be mailed to you free. Write for your copy today.

W. ATLEE BURPEE CO.
Seed Growers Philadelphia, Pa.

HERCULES DYNAMITE

The Banker's Opinion

THE banker classes unproductive land as he does unproductive money. It is an economic waste. He sees many acres covered with stumps or badly in need of drainage, which could be made to yield larger crops and increase the wealth of the community. For this reason the banker was among the first to recognize the value of dynamite for land improvement. He will usually back the farmer who wishes to use dynamite for land clearing and drainage.

Many farmers, as well as bankers, know the value of developing idle land. Clark G. Kuney of Sunset Farm, Three Lakes, Wisconsin, cleared 1000 acres with the aid of Hercules Dynamite.

He made this new land produce 40,000 bushels of potatoes and 3,000 bushels of rye. "We have kept a careful record", Mr. Kuney wrote us, "---and we figure that we can pay for the cost of removing our stumps the first year".

If you are hesitating about clearing your land, talk it over with your banker and get his advice.

HERCULES POWDER CO.

1004 Orange Street
Wilmington Delaware

Send for
"Progressive Cultivation"

"Progressive Cultivation", a 68-page book tells in detail how to use Hercules Dynamite for land clearing, ditching, subsoiling, and tree planting. Write for a copy today, and state your problems to our Agricultural Department.



Hercules Dynamite is sold by Leading Dealers

there be of farm produce to divide among the whole people and higher and higher will go the price of that which is produced."

COSTLY CLOVER SEED AIDS ALFALFA CULTURE

The high price of red clover seed is likely to cause farmers to grow more alfalfa, according to specialists at the Ohio Experiment Station. Alfalfa seed costs about the same as red clover seed but when a good alfalfa stand is secured it will produce abundantly without reseeding for three to five years and a larger tonage of hay to the acre may be grown generally with alfalfa than with clover.

Alfalfa thrives well where good drainage is provided, where there is plenty of lime in the soil and where the soil is in a fair state of fertility.

Alfalfa culture methods differ. In the western part of the State the alfalfa is frequently sown in regular rotation similarly to red clover. In eastern Ohio it is generally sown as a regular crop in midsummer—last of June to the first of August—and allowed to remain 4 or 5 years or as long as the stand will justify.

Ten pounds to the acre of seed at the Ohio Experiment Station has given better results than when sown at a heavier rate. The seed should be inoculated.

J. L. King, '14, is with the Pennsylvania Bureau of Plant Industry, State College, Harrisburg, Pa.

Harry Atwood, '15, is a Smith-Hughes teacher in Harmony township, Clarke county.

C. E. Wylie, '15, is head of the Dairy Department of the University of Tennessee.

Prof. Rader's Dancing Calendar

NEIL AVENUE ACADEMY

Take Neil Ave. Car and get off at Poplar Ave.
647 Neil Ave.—Phones: Citiz. 4431; M. 6189



Beginners' Class Tuesday evening, March 23, 7:30.

Afternoon Class Thursdays, 2:30.

Assembly Nights—Mon., Thur., Fri. and Sat.

Tuition for Beginners—Per term of 10 lessons, ladies \$5, gentlemen \$6; juveniles, per term of 12 lessons, \$5; private lessons, 5 for \$6.

Tuition can be paid \$1 a lesson until paid. Private lessons can be had afternoon or evening. We aim to teach you to dance in one term.

OAK STREET ACADEMY—827 Oak St.

Phones—Citiz. 7105; Residence, Citiz. 4431; Main 6189

A strictly private place for club dances, card parties and for classes that organize for special instruction.



Did You Ever Own a Calf?

If you did—all your very own—I'll wager you took a lively interest in caring for it and watching it grow. It's human nature to take a greater interest in the things we own and that represent possible profits to us personally.

The most effective method of interesting boys and girls in agriculture is to let them have a part in the farm livestock or crops, and let them invest, save or spend the profits as they wish.

DEVELOPS SELF-RELIANCE

This method teaches them how to raise good stock and crops, develops their self-reliance and prevents them from becoming restless and dissatisfied with farm life. You will find the ma-

jority of the boys and girls will save and reinvest their profits wisely instead of spending them foolishly.

The boys and girls who have this opportunity will want to continue to learn all they can about agriculture. Many of them will attend the agricultural colleges in order that they may be as well equipped as possible to make a permanent success on the farm.

Successful Farming, published at Des Moines, Iowa, is doing everything it can to help farm boys and girls realize their hopes. The future of the country lies very largely in the hands of these boys and girls. Agriculture must be made so attractive and profitable that they will choose it as their vocation.

It is the duty of the farm magazines to help farmers collectively and individually. Successful Farming is boosting the club work at every opportunity, even to the extent of offering valuable prizes to those who excel in the different branches.

SUCCESSFUL FARMING HELPS

In order that every farm boy and girl may have an opportunity to compete for these and other prizes, Successful Farming loans them money, without security, to buy a calf, pig, chickens, or seed for a field or garden crop. The boys and girls who borrow money in this way, instead of having their parents give them a calf or pig, gain the actual business experience, and take a more active interest in the project.

This is one of the many helpful service departments of Successful Farming. This magazine is doing everything it can to help the cause of agriculture. The subscription rate is reasonable—\$1 for 3 years. Sample copy on request. Write us if we can be of service to you.

SUCCESSFUL FARMING

THE FARMERS' SERVICE STATION

E. T. MEREDITH, Publisher

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are the cheapest
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Everybody wants the best, provided its cost is within his means. Fortunately a DE LAVAL costs but little more than an inferior cream separator and saves that difference every few weeks.

Moreover, an inferior separator wastes in time and labor, and in quantity and quality of product what a DE LAVAL saves, and goes on doing so every time it is used, twice a day every day in the year.

If you doubt this is so, try a new DE LAVAL alongside any old machine you may be using or other make of separator you may have thought of buying. Every DE LAVAL agent will be glad to afford you the opportunity to do so.

If you don't know the nearest De Laval agent, simply
address the nearest De Laval main office, as below

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